The Builder.

No. CCCCLXIII.

SATURDAY, DECEMBER 20, 1851.

A MILLION of people, on a moderate calculation, derive the basis and medium of most of their fluid sustenance and culinary processes — their *pabulum vitæ* — water, from the Thames, into which the whole of the sluggish and imperfect drainage and corruption of the metropolis is disembogued. Two millions of people, at the lowest calculation, breathe continually the air of streets and houses, the whole substratum of which is saturated with the abomination of cesspools and stagnant sewers, whose steaming vapours and gases are continually impregnating the air so breathed. These are facts no less horrible and astounding, than disgraceful to the boasted refinement, energy, and wealth of the metropolis of the British empire. True, the exertions of some are never-ceasing; but if the senses of the mass of the community were not blunted by habit, so as to be utterly unconscious of the evils, in the midst of which they vegetate, or stagnate rather, it could never have remained for any, in the latter half of the nineteenth century, to taunt them with the existence or the endurance of such evils. It is full time that the matter should be taken properly in hand, and that, by one spirited and comprehensive effort, all traces of uncleanness should be swept away. The most serious complaints are indeed continually made to those whose duty it has hitherto been to remove the source of mischief, but whose practice has been, perhaps unavoidably, merely to dally with it, stir it up, and intensify our consciousness of it. Even palliation is put off by the perpetual assurance that "there can be no relief previous to the execution of the comprehensive drainage plan, which is in contemplation." What we now want is immediate action, not mere dallying "contemplation." Something *must* be done. The Thames must be purified, and the air must be made wholesome.

If we may judge from the proceedings at recent meetings, the Commissioners of Sewers have no intention of attempting this, at all events at present. They are reducing the establishment and appear to be setting their house in order for quietly carrying on the present business;—even countermanding some of the isolated works which had been ordered, amounting in cost to 41,000*l.* It was on the 10th instant that Mr. Lawes, the chairman, brought forward the scheme for the reduction of the establishment, and which the Court at once unanimously adopted.

It will be observed, by the way, that, under the present arrangements, nothing is brought forward before the Court *for discussion*: this we suppose passes elsewhere: it simply comes there for formal acceptance.*

On the occasion to which we have alluded, Mr. Lawes stated that the opinion both in Parliament and out of doors being, that the expenditure was greater than the necessities of the case, or the amount of works executed, would justify, he had obtained returns of the charges at different periods. He found that on the 30th of November, 1847, the establishment charges amounted to 12,838*l.* 5s. 9d. On the 5th of January, 1849, they amounted to 16,778*l.* On the 8th of October, 1849, they had increased to 22,820*l.*; and on the 1st of August, 1851, the same charges amounted to 24,753*l.* 15s. 8d. Upon a reference to the amount of public works executed during the several years to which that return related, he found that in 1847 they amounted to 70,630*l.* 4s. 7d.; in 1848, to 79,665*l.* 9s. 7d., of which sum 32,172*l.* 19s. 5d. was in respect of works executed or put in hand prior to November, 1847; in 1849, the works executed amounted to 50,309*l.* 4s. 1d.; and in 1850, to 57,655*l.* 6s. 4d. It would then at once be seen by comparing those sums with the amounts expended in establishment charges that they bore a very large proportion indeed to the extent of public works executed by the commission. By the scheme submitted he showed that, including some reductions lately made, a gross annual saving of 9,027*l.* would be effected in the establishment charges, now estimated at 29,064*l.*

Founded on the pressing want, a Company to drain London has been set on foot, and the necessary steps have been taken preparatory to applying to Parliament for the purpose of securing an Act of Incorporation during the forthcoming session. The Bill, it appears, has been submitted to the Government, with the view to obtain their sanction to the introduction of a clause which will, in consideration of the public benefits to be attained, *guarantee a minimum rate of* 3 *per cent. interest to the shareholders in the enterprise.* The estimates, however, give assurance, it is said, that the works may be constructed without subjecting the ratepayers to any charge whatever.

The plan (not a new one) of this company is described as consisting of—

"A tunnel-sewer on each side of the Thames, crossing under the present sewers without disturbing them, and receiving the contents of each through a shaft. These two tunnel-sewers will be constructed by tunnelling or boring, and will be laid with such an additional fall, or inclination, as will secure a rapid subterranean current towards the marshes east of the metropolis, where the refuse-matter will be raised by mechanical means, for agricultural purposes. The company's works will afford means for effectually *draining* the lowest parts of the metropolis: an important *sanitary improvement* will be conferred, by the proposed removal of the refuse which now vitiates the atmosphere: the *Thames water*, which is used by a million of the inhabitants, will be preserved from pollution; and a *guano field*, of vast extent, will be collected for the use of our agriculturists."

They naturally quote the declaration of a Select Committee of the House of Commons, on July 13, 1846:—"That it is only through the agency of a company," that the various plans proposed to them "may be all combined and applied to the important purposes of cleansing our towns, purifying our rivers, and enriching our soil." "Commercial enterprise," says Mr. Morewood, the projector of this company, in a communication to us on the subject, "can point to works which it has devised, successfully carried, and managed, although involving an expenditure of several hundred millions sterling. It has accomplished works previously esteemed impossible. We can also organise an Exhibition, passing like a meteor along the horizon. * * * Fifty-six years ago it was felt that a dock was wanted for ships. The subject was fully laid before a general meeting, and in December, 1795, the project proposed was unanimously approved of, and a subscription of 800,000*l.* was filled in a few hours for carrying the same into effect. In 1851, redundant capital is seeking employment in every part of the globe. Who then, will now join in the honour of prosecuting and securing to the metropolis a work, which in its beneficial results will not stand second to any other work which man has accomplished?" There are few things that commercial enterprise cannot accomplish, but to enlist it there must of course be a reasonable prospect of gain. We have always viewed favourably the endeavours made to apply the produce of the sewers to agricultural purposes; and are most anxious to see brought into practice what *ought* to be so profitable. Certainty, however, on this head has not increased; the difficulty of application has not lessened; and whether the prospect of remuneration which the scheme affords be sufficient to bring in the capital required to effect the complete and perfect drainage of London remains to be seen. If it were otherwise, however, we are not anxious to confide this important matter to a commercial company. The first and paramount object is the effectual drainage of the metropolis, not to make money by it, and this must be done by the public, irrespective of cost and returns.

Mr. Lewis Gordon, the engineer, has recently published a description of Captain Vetch's plan for the sewerage of the metropolis,* by which it was proposed, it will be remembered, as in some other plans, to gather up the sewage on each side of the Thames, to establish settling tanks near Plaistow Level, and at Deptford, and to take the overflow into the river at a short distance west of Barking Creek. "There is no room," says Captain Vetch, "for half measures: it is in vain to hope that the sewerage of the town can be materially improved until the river is freed from the pollution at present discharged into it." We may mention that the Captain's views on Water Supply are added: the two subjects are intimately connected, and ought always to be considered together.

At Croydon, last week, new combined works of water supply and drainage were opened. The supply of water is derived directly from a spring, which has been found adequate for the supply of the whole town, with only the intervention of a covered reservoir 75 feet in diameter, to adjust the twenty-four hours' flow of the spring to the twelve or fourteen hours' consumption, this arrangement obviating the exposure of the water to pollution, and its deterioration from stagnation. The works, we understand, were designed by Mr. W. Ranger, and are especially noticeable as the first constructed under the Public Health Act. At a meeting there on the occasion, it was stated that—

The expense of the water supply in the metropolis, taking as examples three average London parishes supplied by trading companies, was 3*l.* per annum per house, one with another, or about 1s. 2½d. per week, for an intermittent supply, besides the expense and

* One exception occurred on the 17th inst., when the motion, "that the services of Mr. John Phillips, as surveyor, be discontinued," was carried by one only. Remembering the good service performed by Mr. Phillips at an earlier period, the public will probably ask the reason for his dismissal. We were glad to observe that Mr. Allason, who was a member of the old Westminster Commission, moved a proposition to retain Mr. Phillips.

* "A short Description of the Plans of Captain Vetch for the Sewerage of the Metropolis." London: Wyld, 1851. Various maps accompany it.

the pollution of the water occasioned by the use of cisterns; whereas at Croydon, under the Public Health Act, the expense of a constant supply of water, entirely free from animal impurities, and free from the soot and dirt of cisterns, well aërated and fitted for immediate use at the table, would be at an average rate of only 12s. a house per annum, or less than 3d. per week per house, while no cisterns or expensive works of the kind would be required in any of the houses. This calculation was made for works which had been laid out for the progressive increase of the town, and for double the present population, and then the cost would be reduced to an expense of 1½d. per house per week; and this constant and unlimited supply of pure spring water could be given to the poorest houses in the place at the rate of 1d. a week per house.

With respect to drainage, too, a great saving is to be effected, and we may have an opportunity to look more carefully into the arrangements.

Returning to London, we re-urge the crying necessity of freeing the river from pollution, and providing perfect drainage for the town. Half-measures will not do: we must have the most perfect plan that can be obtained. "Lords and Commons of England," we say with Milton, "consider what nation whereof it is ye are, and whereof ye are the governors; a nation not slow nor dull, but of a quick, ingenious, and piercing spirit; acute to invent, subtle and sinewy to discourse, not beneath the reach of any point the highest that human capacity can soar to."

ON SOUND CONSTRUCTION IN REFERENCE TO THE BUILDING ACT.

Your observations upon the materials and workmanship employed in speculative buildings, and the illustrations which they derive from the accidents that are sometimes occurring, will, I trust, command serious attention. They are pregnant with instruction, and convey lessons for precaution, which it behoves us all to ponder well and in time.

Never were tact, firmness, and good sense more necessary in the district surveyor; for there are four great causes which tend to deprive him of the moral support and influence which ought to be conceded to him as a public officer, whose duty it is to protect the lives and property of the public. First, there is the anomalous position of the Metropolitan Buildings-office; secondly, the weakly-advised court of appeal—her Majesty's Commissioners of Works and Buildings; thirdly, the tendency of the first Commissioner of Works and Buildings to allow his judgment, in framing the various bills, to be swayed and controlled by that very body, and especially the speculative builders, whose misdoings or want of judgment it is the one great purpose of the Building Act to counteract,—they have such an interest in rendering the Act as inoperative as possible, that it is of course their object to neutralise its requirements, and leave themselves free to go a-head unheeded and unrestrained; fourthly, the strange assumption of most of the magistrates to ignore their purely ministerial administrative character, and to rehear *de novo*, and rejudge cases already heard and already judged by a more competent authority, and whose decision it is their proper duty merely to grant the powers to carry into effect.

Nothing can be more irksome to the district surveyor than to have perpetual squabbles with the builders, and nothing is more inimical to his own interest than to impede the progress of building operations. If, then, the district surveyor considers himself compelled to take steps against a builder, it may be *generally* assumed, for I do not argue upon exceptional cases, that it is from a sense of duty; for he derives no remuneration for the additional trouble, and exposes himself to a great deal of vexatious opposition and loss of time.

But their duties would be materially lightened if one class of trade, which would be materially benefited, I mean smiths and founders, would turn their attention to the matter, and second the primary intention of the legislature in carrying out the building regulations. I allude to the more general introduction of iron, even as an *economical* material in various departments of construction. In the first place, I do not see why cast iron cornices for houses and shop fronts should not be introduced. At Paris, many entablatures to some of the most elegant "*magazins*" are of this material, and present a great variety of design. And no greater monotony need result than is now perceptible in our shop frontispieces, most of which are more or less repetitions of one another. Again, why may not balconies, conservatory inclosures, and verandahs and outside blinds be of metal instead of wood, so inflammable a
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I shall not allude to other expedients adopted usually by experienced architects and surveyors in the erection of buildings, and which might not be absolutely requisite in ordinary cases, and frequently vexatious. If it were thought necessary to contemplate all possible casualties by direct enactment, or to leave it to the responsibility of the district surveyor to require such and such increase of strength and addition of material, as he might think expedient, I fear the public would have to incur an enormous expense, as distributed over all the districts, more than equivalent (and I trust I may say it without being deemed as irreverently regardless of human life) for the comparatively few casualties which occur in the metropolis, and which do not exceed one per fifty thousand per annum, and most of which are caused by the negligence of the workmen themselves, more than through any defect of construction.

T. L. Donaldson.

Society of Arts.—On Wednesday evening, 17th inst., Mr. Jacob Bell, M.P., delivered the third of the series of Exhibition lectures at the Adelphi. The subject was "Chemical and Pharmaceutical Products."

NOTES ON A FEW IMPORTANT QUESTIONS IN ARCHITECTURAL PRACTICE.*

Instead of writing a paper upon any one particular subject relating to the profession, I have put together briefly my notions upon several. The subjects that I touch upon are these:—"The Nomenclature of what is termed Gothic Architecture;" "Copyism and Style;" "Ancient Lettering;" "Church Woodwork;" "Materials for External Work;" "Restorations;" and "Monuments."

I wish this paper to be viewed in the same way as we look over a sketch book, where we expect and indeed hope to find something fresh, though little elaborated, in every page we turn to. To begin, then, with

The Classification of what is termed Gothic Architecture.—It is any thing but satisfactory to find the buildings of this country continually being re-classified by our professors and amateurs: we have amongst the numerous
of "Early Middle Pointed," or "Complete and After Gothic."

My second note relates to—

"*Copyism and Style.*"—Those who come under the denomination of Gothic, or as we will now call them, English architects, abuse the classic ones for copying the temples of Greece and Rome: the classic gentlemen tell us that their opponents copy the churches of the thirteenth and fourteenth centuries; others abuse both, and while denouncing copyism altogether, tell us to follow the laws of nature and Venetian architecture. Now, Venetian palaces are much better in Venice than in Pall-mall. Grecian buildings, fine as they are in Greece, are not suitable for London. Italian ones should remain in Italy; and, certainly, Chinese houses, whatever merit they possess, had better keep to China, and China only. But although we should not *copy* the buildings of other nations, let us *study* them well; learning elegance from one—beauty, magnificence, and grandeur from others. Our own structures, however, must be really and truly English,—not that I wish old churches copied at the present day, or desire cusped windows with quarried glass, in our offices or bedrooms, but improvements upon the old building with our latest inventions introduced, the whole carried out in the *spirit* of the old architects, who, if they had lived till now, would have

* A Paper read at the ordinary meeting of the Architectural Association, on Friday, Dec. 12.

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led us *on* in style instead of the other way, and would soon have shown us what to do with ventilators, plate glass, water pipes, stoves, and such things, rather than have concealed them, as is generally attempted to be done in the present day. Not only should we abstain from copying buildings, but also materials: thus, wood and cement should never look like stone or marble: chimneys should not be disguised as urns, or library doors be like rows of books: and in using iron-work, attempts should not be made to treat it as stone, which owes its effect to light and shade; for ironwork, properly arranged, trusts to its *form only*: anything, therefore, executed in this material is always perfect of itself, that is, it never requires any particular light or sunshine to show off its beauties: when seen at all, it is always to advantage. Mouldings, which have done so much for the architecture of all ages, are bad, and people will hang their hats on them. The backs of seats are for people to lean against,—sharp mouldings should, therefore, *not* run along the tops of them.

As to the woodwork generally, if we are content to use deal, we should not be ashamed to own it: to stain or paint in imitation of oak, or any other wood, is, I think, wrong: we should either leave it in its natural state, varnish, or else paint the work of plain tints, using stripes, diapers, or running patterns if we please, but *without shading* or *graining* of any description. While thus paint improves an inferior material, people are not deceived; for they know that if the work were of walnut, rose, ebony, or of any other superior sort, we should not think of colouring it at all. Paint, then, in this way hides the wood, but does not disguise it.

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people are *not* placed in the lobbies or anywhere else where they cannot see the performance; neither is a gallery, nor even a single seat, erected to interfere in the least with the design or convenience of the building: as to the general effect, the design of a theatre is never considered complete until its numerous stalls and boxes are filled with human beings. If then we take so much care with our theatres, should we not have much more anxiety in the arrangement of churches? They should have proper sittings: every one should see and hear, and no one be placed in a gallery or in any other uncomfortable or conspicuous position, to the annoyance of himself and disfigurement of the building: all the sittings should be on the floor, and all face the east: they should have low backs and no doors: the ends of the sittings should be like the ends of benches, and not like pew-ends without doors. It is useless to talk either of moveable seats or no seats at all: we require them fixed, and not too near to each other. Most of the churches erected within the last few years have their sittings arranged most uncomfortably: they have been placed as closely together as possible, and in every little nook and corner, because the greater the number of seats provided the larger is the grant of money received from the Church Commissioners.

"Poppyheads" are not, I think, advisable: a few in an old or small building always look well; but hundreds of them in long rows are bright as ever. If all our old houses were covered with cement, and if all the people in a row were obliged to colour them down of the same tints, and at the same time, every two or three years, we should no longer have London as dismal as at present: the streets would appear wider, less foggy, and very much warmer. These remarks apply to all our old brick buildings; but new ones, whether public or private, should be, as I said before, of materials that do not change their colour, durability, or form, and are never the worse, except through actual wear.

Restorations.—In restoring a building we should never try to make it look like a new one, or indeed to make any old portion of it appear new. Whether much or little be done it should correspond with the old work, so that at the completion of the job no one, upon seeing the place, might notice that workmen had been there at all. If, however, a tower or aisle has to be added to a church where no such thing existed before, I do not mean that it should be actually made to look like old work, but agreeing with the building as to character and proportion, it should still have every appearance of a 19th century addition. In alterations to late work how ridiculous it is to make them of an earlier period; yet many do this on account of their partiality to some particular date. Suppose the choir of St. Paul's had to be rebuilt, how would it look with even the beautiful apse of Westminster Abbey or Cologne Cathedral? It is difficult, however, to lay down rules for restoring our buildings, for what will suit one will not another: the chief thing to remember is to take care of and to preserve everything of interest that we find: walls, windows, roofs, all must be made as secure as possible, but the less we alter or rebuild the better. The charm about a cathedral or old village church is often quite lost on account of the restorer doing too much, and trying to make the place new and uniform. It is far better to do *too little*, for when once a building is robbed of its individuality it no longer delights and instructs those who gain so much from the old buildings of this country.

My last note consists of a few remarks upon

Monuments.—The cross, the emblem of our faith, is the most appropriate and beautiful form by which to mark the last resting place of a departed friend. It should be substantial, to endure for ages: if of stone, it is better merely to pierce the cross, instead of elaborately carving upon the surface: the lettering deeply cut to be perpendicular, and never in a horizontal position. Crosses may also be of metal or earthenware, and a simple oak one put together by a village carpenter may last for ages. Formerly, people were buried in churches, but instead of having monuments to obstruct the passages, engraved brasses were used by being let into slabs level with the pavement: these, however, are not now required, as burials no longer take place within our sacred walls. When monuments are erected in public places to commemorate the good deeds of statesmen or heroes, the custom has been for a long time to put up columns with or without statues above them. Nothing can be in worse taste, for a column is merely a portion of a building, it is not complete either of itself or with a figure on its summit: we may just as well erect a tall factory chimney, or a great brest-summer to the memory of a noble duke or country squire, as works similar to those in Waterloo-place and Trafalgar-square.

Like an Eleanor cross, a monument should be of itself perfect; not as though a dozen would form a good portico, but as a monument and nothing else. When placed in a church it should not appear hanging against a wall as though it would slip off, but either be placed in a recess, or else carried down to the ground. A monument may also be in the shape of a new window, font, or screen: the inscription in either case records the name: the building gains in beauty.

In these few and brief notes I have perhaps shown that my views upon several points are not in accordance with those generally adopted. I have brought them, however, together, because it is only by learning and discussing opinions that we think and decide for ourselves. And as we do carefully settle our ideas upon such subjects, let them also be visible in our works; at the same time we must take especial care of how we think, and what we do, in the first few years of practice. We must spare no pains or trouble so to carry out our early works, that when we look back in after life, whether from the top or bottom of the tree, we may do so not with shame and regret at our infantine attempts, but rather with pride and satisfaction upon our first efforts to spring forward in the light of true architecture. GEORGE TRUEFITT.

STRIKE ON THE GREAT NORTHERN.—At Grantham, the navvies, between 500 and 700, have struck work, in consequence, as they allege, of breach of faith on the part of their employers, and foul language on the part of one of their gangers. They demand a return to the daily rate of 2s. 6d. wages, which they appear to have been promised for the winter, on condition that they remained during last harvest, which they did, while others then quitted their employment. The men acted ultimately very peaceably, it is said, but the first malcontents appeared to have compelled others to quit work at the beginning of the strike.

the pollution of the water occasioned by the use of cisterns; whereas at Croydon, under the Public Health Act, the expense of a constant supply of water, entirely free from animal impurities, and free from the soot and dirt of cisterns, well aërated and fitted for immediate use at the table, would be at an average rate of only 12s. a house per annum, or less than 3d. per week per house, while no cisterns or expensive works of the kind would be required in any of the houses. This calculation was made for works which had been laid out for the progressive increase of the town, and for double the present population, and then the cost would be reduced to an expense of 1½d. per house per week; and this constant and unlimited supply of pure spring water could be given to the poorest houses in the place at the rate of 1d. a week per house.

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Nothing can be more irksome to the district surveyor than to have perpetual squabbles with the builders, and nothing is more inimical to his own interest than to impede the progress of building operations. If, then, the district surveyor considers himself compelled to take steps against a builder, it may be *generally* assumed, for I do not argue upon exceptional cases, that it is from a sense of duty; for he derives no remuneration for the additional trouble, and exposes himself to a great deal of vexatious opposition and loss of time.

But their duties would be materially lightened if one class of trade, which would be materially benefited, I mean smiths and founders, would turn their attention to the matter, and second the primary intention of the legislature in carrying out the building regulations. I allude to the more general introduction of iron, even as an *economical* material in various departments of construction. In the first place, I do not see why cast iron cornices for houses and shop fronts should not be introduced. At Paris, many entablatures to some of the most elegant "*magazins*" are of this material, and present a great variety of design. And no greater monotony need result than is now perceptible in our shop frontispieces, most of which are more or less repetitions of one another. Again, why may not balconies, conservatory inclosures, and verandahs and outside blinds be of metal instead of wood, so inflammable a matter? I seek, as much as possible, to induce builders in my district to adopt iron trimmers to the fireplaces, consisting of inch or inch and a quarter square or circular iron bar: the economy of expense both as to labour and material is remarkable; and there is this further advantage, that it prevents the constant recurrence of the question of the insertion of trimmers into or near the flues.

Again, I do not see why every external window and door-opening should not be required to have a cambered bar as well as the chimney-openings; for more frequently the weight is enormous which comes directly over the window-arches, particularly that now-a-days no attention is paid to make "*voids over voids, solids under solids,*" and immense solidity would be added to external walls, if bars, say 2 or 3 inches wide and 3-8ths thick for ordinary houses, were introduced the whole length of the fronts, bedded in cement immediately over the openings, and relieving the arches from considerable strains.

Nor do I think that the Legislature would err, if it required, in the height of each story, two tiers of hoop iron bond, laid in one course with fresh cement and sand in equal quantities, and each tier consisting of at least two lengths of hoop iron not less than an inch and a half wide and 1-16th thick, a precaution the more necessary since wood bond has been so properly precluded from party-walls.

I am not sure that it would not be wise in the Legislature, as a *sanitary* precaution in order to keep out damp, to require that none but sound stock bricks be used in all external walls; and, as a *constructive* precaution, that none but stock bricks be used in the brickwork of the lowermost story and in the chimney-breasts and widths of the flues; allowing not more than one-third place-bricks to be used in the rest of the party-walls. The remission of the duties on bricks would justify such a requirement on the part of the Legislature.

I shall not allude to other expedients adopted usually by experienced architects and surveyors in the erection of buildings, and which might not be absolutely requisite in ordinary cases, and frequently vexatious. If it were thought necessary to contemplate all possible casualties by direct enactment, or to leave it to the responsibility of the district surveyor to require such and such increase of strength and addition of material, as he might think expedient, I fear the public would have to incur an enormous expense, as distributed over all the districts, more than equivalent (and I trust I may say it without being deemed as irreverently regardless of human life) for the comparatively few casualties which occur in the metropolis, and which do not exceed one per fifty thousand per annum, and most of which are caused by the negligence of the workmen themselves, more than through any defect of construction.

T. L. Donaldson.

Society of Arts.—On Wednesday evening, 17th inst., Mr. Jacob Bell, M.P., delivered the third of the series of Exhibition lectures at the Adelphi. The subject was "Chemical and Pharmaceutical Products."

NOTES ON A FEW IMPORTANT QUESTIONS IN ARCHITECTURAL PRACTICE.*

Instead of writing a paper upon any one particular subject relating to the profession, I have put together briefly my notions upon several. The subjects that I touch upon are these:—"The Nomenclature of what is termed Gothic Architecture;" "Copyism and Style;" "Ancient Lettering;" "Church Woodwork;" "Materials for External Work;" "Restorations;" and "Monuments."

I wish this paper to be viewed in the same way as we look over a sketch book, where we expect and indeed hope to find something fresh, though little elaborated, in every page we turn to. To begin, then, with

The Classification of what is termed Gothic Architecture.—It is any thing but satisfactory to find the buildings of this country continually being re-classified by our professors and amateurs: we have, amongst the numerous terms at present in use—Mediæval, Gothic Church, Spiritual, Pointed, Christian, Middle Age, Ecclesiastical, and Romantic architecture; these meaning one and the same thing, being divided into styles, periods, or ages (all in a state of progress or transition), and up to this time called by at least 150 different names: so many, in fact, are the terms now in use that it is quite an exertion even for an architect to become acquainted with them. Notwithstanding all this, there does not seem to be any very great difficulty in describing a building to any one *in* the profession. Who, however, has not been sorely vexed while endeavouring to do so to one not acquainted with our changeable nomenclature? To talk to the public about a church being "Perpendicular," "Early Complete Gothic," or "Debased," is of little use: they naturally expect to understand us at once, and without the least explanation. If we speak of Grecian, Roman, Egyptian, or Chinese architecture, people know what we mean; but so long as we talk about "English Perpendicular," "Decorated Scotch," or "Irish Early English," they will not and cannot comprehend us. Why not, then, call our own architecture simply "*English?*" Every one will understand the meaning of "English architecture of the thirteenth century," also fourteenth or fifteenth century, Irish, Scotch, French, German, or Spanish: we shall thus get over all difficulties as to the transitional state of our buildings, and shall do away with the numerous styles, periods, and orders that have puzzled the learned and unlearned for so many years.

By so speaking about buildings, we not only give ourselves less trouble, but we are able to converse upon architectural subjects with the most uneducated without having to enter into long explanations as to the meaning of "Early Middle Pointed," or "Complete and After Gothic."

My second note relates to—

"*Copyism and Style.*"—Those who come under the denomination of Gothic, or as we will now call them, English architects, abuse the classic ones for copying the temples of Greece and Rome: the classic gentlemen tell us that their opponents copy the churches of the thirteenth and fourteenth centuries; others abuse both, and while denouncing copyism altogether, tell us to follow the laws of nature and Venetian architecture. Now, Venetian palaces are much better in Venice than in Pall-mall. Grecian buildings, fine as they are in Greece, are not suitable for London. Italian ones should remain in Italy; and, certainly, Chinese houses, whatever merit they possess, had better keep to China, and China only. But although we should not *copy* the buildings of other nations, let us *study* them well; learning elegance from one—beauty, magnificence, and grandeur from others. Our own structures, however, must be really and truly English,—not that I wish old churches copied at the present day, or desire cusped windows with quarried glass, in our offices or bedrooms, but improvements upon the old buildings with our latest inventions introduced, the whole carried out in the *spirit* of the old architects who, if they had lived till now, would have

* A Paper read at the ordinary meeting of the Architectural Association, on Friday, Dec. 12.

led us *on* in style instead of the other way, and would soon have shown us what to do with ventilators, plate glass, water pipes, stoves, and such things, rather than have concealed them, as is generally attempted to be done in the present day. Not only should we abstain from copying buildings, but also materials: thus, wood and cement should never look like stone or marble: chimneys should not be disguised as urns, or library doors be like rows of books: and in using iron-work, attempts should not be made to treat it as stone, which owes its effect to light and shade; for ironwork, properly arranged, trusts to its *form only*: anything, therefore, executed in this material is always perfect of itself, that is, it never requires any particular light or sunshine to show off its beauties: when seen at all, it is always to advantage. Mouldings, which have done so much for the architecture of all ages, are scarcely required in our use of iron, on account of the latter being so perfectly independent of that for which mouldings are used in other materials: they are only admissible when we require them for their *form*. A very great deal will doubtless be done in metal work before long, and if properly treated, a new and decided character will be given by it to the *style* of buildings erected during the latter half of the nineteenth century.

Ancient Lettering.—The bright, the elegant old letters of the twelfth and thirteenth centuries, illuminated with gold and colour, and as beautiful in execution as design, must be admired by all who search under whitewash and into the manuscripts of past ages. Is it, however, right, that in our love for them we should introduce their forms unaltered into the buildings of the nineteenth century? No; for when we come to think of it, it is truly ridiculous to put up prayers and texts in modern churches which can only be understood by a few architects and antiquaries. Surely these good people are not the *only* ones intended to have the benefit of what is written there: every one who can read at all ought to be able to decipher each word that appears on the walls of our places of worship: the more unlearned the man, the clearer the writing should be; for these sentences and commandments are not for the decoration of the church, or for the few to show how clever they are at being able to make them out, but that all, even the youngest and dullest, may read and learn. Let, then, our writing be legible, but no one need fancy that he can spend too much taste or thought in ornamenting it either as to form or colour.

Church Woodwork.—Theatres are erected in such a way that the greatest number of persons may be accommodated therein with convenience, and that all may see and hear well: people are *not* placed in the lobbies or anywhere else where they cannot see the performance; neither is a gallery, nor even a single seat, erected to interfere in the least with the design or convenience of the building: as to the general effect, the design of a theatre is never considered complete until its numerous stalls and boxes are filled with human beings. If then we take so much care with our theatres, should we not have much more anxiety in the arrangement of churches? They should have proper sittings: every one should see and hear, and no one be placed in a gallery or in any other uncomfortable or conspicuous position, to the annoyance of himself and disfigurement of the building: all the sittings should be on the floor, and all face the east: they should have low backs and no doors: the ends of the sittings should be like the ends of benches, and not like pew-ends without doors. It is useless to talk either of moveable seats or no seats at all: we require them fixed, and not too near to each other. Most of the churches erected within the last few years have their sittings arranged most uncomfortably: they have been placed as closely together as possible, and in every little nook and corner, because the greater the number of seats provided the larger is the grant of money received from the Church Commissioners.

"Poppyheads" are not, I think, advisable: a few in an old or small building always look well; but hundreds of them in long rows are bad, and people will hang their hats on them. The backs of seats are for people to lean against,—sharp mouldings should, therefore, *not* run along the tops of them.

As to the woodwork generally, if we are content to use deal, we should not be ashamed to own it: to stain or paint in imitation of oak, or any other wood, is, I think, wrong: we should either leave it in its natural state, varnish, or else paint the work of plain tints, using stripes, diapers, or running patterns if we please, but *without shading* or *graining* of any description. While thus paint improves an inferior material, people are not deceived; for they know that if the work were of walnut, rose, ebony, or of any other superior sort, we should not think of colouring it at all. Paint, then, in this way hides the wood, but does not disguise it.

Materials for External Work.—In taking a house that has been inhabited for some time, the first thing we do to make it cheerful and pleasant is to have the whole interior fresh papered, painted, and whitewashed: we wish to make it look as brilliant as possible; and in a few years, when all begins to look dingy, the same operation is performed, and the house is again decent. But as to exteriors, the matter is not so easy: houses are built of brick in London, and from their completion they get darker and darker every day of their existence: the reveals of windows and a few details get a coat of paint now and then, thereby making the brickwork all the worse. The consequence is, that London looks dreary and dismal wherever we go. Who ever enjoys a walk up Baker, Harley, or Gower streets?—No one. And no one can, so long as they remain in their present state. We must first make them look light and clean, and people will then seek after rather than avoid them. The buildings of large towns should be erected in such a way as never to look any the worse *except through actual wear*: they should *always* be clean and bright: smoke, mud, sunshine, and frost should have *no* effect upon them: they should be the same in fifty years as when just completed. To accomplish this, we must do away with our present bricks and stone for external work, and use glazed bricks, glazed tiles, porcelain, glass, and any other material that will preserve its colour, durability, and form. At present, if our buildings are of brick, stone, granite, or marble, in a short time they are all alike, quite black, the carvings and mouldings being lost in soot. As to the brick ones, the only way to improve them is to cover them with cement (as cement, and not jointed and worked in imitation of stone): we thereby strengthen the old walls and make the houses warmer: all our decorations become visible, and every now and then a coat of colour makes a place as bright as ever. If all our old houses were covered with cement, and if all the people in a row were obliged to colour them down of the same tints, and at the same time, every two or three years, we should no longer have London as dismal as at present: the streets would appear wider, less foggy, and very much warmer. These remarks apply to all our old brick buildings; but new ones, whether public or private, should be, as I said before, of materials that do not change their colour, durability, or form, and are never the worse, except through actual wear.

Restorations.—In restoring a building we should never try to make it look like a new one, or indeed to make any old portion of it appear new. Whether much or little be done it should correspond with the old work, so that at the completion of the job no one, upon seeing the place, might notice that workmen had been there at all. If, however, a tower or aisle has to be added to a church where no such thing existed before, I do not mean that it should be actually made to look like old work, but agreeing with the building as to character and proportion, it should still have every appearance of a 19th century addition. In alterations to late work how ridiculous it is to make them of an earlier period; yet many do this on account of their partiality to some particular date. Suppose the choir of St. Paul's had to be rebuilt, how would it look with even the beautiful apse of Westminster Abbey or Cologne Cathedral? It is difficult, however, to lay down rules for restoring our buildings, for what will suit one will not another: the chief thing to remember is to take care of and to preserve everything of interest that we find: walls, windows, roofs, all must be made as secure as possible, but the less we alter or rebuild the better. The charm about a cathedral or old village church is often quite lost on account of the restorer doing too much, and trying to make the place new and uniform. It is far better to do *too little*, for when once a building is robbed of its individuality it no longer delights and instructs those who gain so much from the old buildings of this country.

My last note consists of a few remarks upon

Monuments.—The cross, the emblem of our faith, is the most appropriate and beautiful form by which to mark the last resting place of a departed friend. It should be substantial, to endure for ages: if of stone, it is better merely to pierce the cross, instead of elaborately carving upon the surface: the lettering deeply cut to be perpendicular, and never in a horizontal position. Crosses may also be of metal or earthenware, and a simple oak one put together by a village carpenter may last for ages. Formerly, people were buried in churches, but instead of having monuments to obstruct the passages, engraved brasses were used by being let into slabs level with the pavement: these, however, are not now required, as burials no longer take place within our sacred walls. When monuments are erected in public places to commemorate the good deeds of statesmen or heroes, the custom has been for a long time to put up columns with or without statues above them. Nothing can be in worse taste, for a column is merely a portion of a building, it is not complete either of itself or with a figure on its summit: we may just as well erect a tall factory chimney, or a great brest-summer to the memory of a noble duke or country squire, as works similar to those in Waterloo-place and Trafalgar-square.

Like an Eleanor cross, a monument should be of itself perfect; not as though a dozen would form a good portico, but as a monument and nothing else. When placed in a church it should not appear hanging against a wall as though it would slip off, but either be placed in a recess, or else carried down to the ground. A monument may also be in the shape of a new window, font, or screen: the inscription in either case records the name: the building gains in beauty.

In these few and brief notes I have perhaps shown that my views upon several points are not in accordance with those generally adopted. I have brought them, however, together, because it is only by learning and discussing opinions that we think and decide for ourselves. And as we do carefully settle our ideas upon such subjects, let them also be visible in our works; at the same time we must take especial care of how we think, and what we do, in the first few years of practice. We must spare no pains or trouble so to carry out our early works, that when we look back in after life, whether from the top or bottom of the tree, we may do so not with shame and regret at our infantine attempts, but rather with pride and satisfaction upon our first efforts to spring forward in the light of true architecture.

GEORGE TRUEFITT.

STRIKE ON THE GREAT NORTHERN.—At Grantham, the navvies, between 500 and 700, have struck work, in consequence, as they allege, of breach of faith on the part of their employers, and foul language on the part of one of their gangers. They demand a return to the daily rate of 2s. 6d. wages, which they appear to have been promised for the winter, on condition that they remained during last harvest, which they did, while others then quitted their employment. The men acted ultimately very peaceably, it is said, but the first malcontents appeared to have compelled others to quit work at the beginning of the strike.

THE EGYPTIAN OBELISK, USUALLY CALLED "CLEOPATRA'S NEEDLE."

When ancient Rome was at the height of its power, it commenced plundering all the nations of the then civilized world. Long before the era of Augustus, the aristocracy of the Imperial and Eternal City had appropriated to themselves all that was valuable in Italy, Sicily, Africa, Greece. Whatever they could carry away they took: where this could not be accomplished, fire and demolition came to their aid. They were men of the sword, rapacious, unprincipled; elevated above all ordinary feelings and amiable weaknesses of human nature. Their desire to possess the noble monuments of Grecian art was not the result of any inherent taste or tone of art, but simply of a rapacious nature, desirous of becoming masters by violence, by the sword, of objects whose value they knew by their price in the money-market of the world. Should any of your readers doubt this, I beg to refer them to Cicero's Letters, in which they will find the character of the Roman aristocracy drawn unwittingly by a master hand.

This policy, as it was called, of enriching Rome, then cosmopolitan, at the expense of other nations, was continued by Augustus and his successors. Regardless of the heterogeneity of objects — beautiful and sublime when permitted to remain on the soil which gave them, if I may so say, birth, or, at least, existence—the arch-hypocrite continued to embellish Rome at the expense of the world.

Amongst other objects of plunder which he transferred to Italy and to Rome, was an Egyptian obelisk. It is now in Rome, with some others, the result of the continued plunder of Egypt, reduced to a province. Not having seen the Roman (!) obelisk, I cannot, of course, venture to speak of the figure it makes amidst the monuments of Grecian and Italian architecture,—of Greco-Italian, and of the architecture, partly Saracenic, partly Gothic, florid and simple, chaste and superfluously gaudy, which the various races, conquerors of Italy, bequeathed to the still conquered and depressed race of that unhappy country. How these spoliations transferred to Rome look, amidst the heterogeneous architectural mass,—I pretend not to conjecture; but I have seen, the obelisk lately transported from Egypt to France, and now standing erect in Paris,—Paris, the capital of La Belle France,—the centre of taste and fashion,—the star of the civilized world;—and with your permission, I shall offer a few remarks respecting it, the Parisian obelisk, applicable, I think, to the proposal now on foot to erect somewhere in London an Egyptian obelisk.

When it was resolved in France that an obelisk, presented to the nation by one of the blood-thirsty savage rulers of Egypt, should be transported to France, and, of course, to Paris, which is France, men of taste, and they abound in France, were at first puzzled where to place it. It was in their estimation easy enough to transport it to Paris: there is abundance of mechanical ability in the world; but this was not the difficulty with this artistic race,—it was the question of *position*. After much consideration, and the drawing of numerous plans, sketches, and views, they decided on erecting it on perhaps the least objectionable *locale* which Paris afforded, on ground beautifully disposed, at a sufficient distance from other buildings which might, by their size or character, overshadow the gracefully tapering and elegant form of the obelisk, or mar and render ludicrous its antique classic and oriental character when contrasted with the gaudy, flaring, jaunty beauties of modern Paris. Still the result, admitted by the Parisians themselves, was not successful.

The impression made on my mind on a first and second view of the obelisk of Paris, I found to be in accordance with that of every man of taste I conversed with. Dislocated from the soil on which it was erected, from the glorious sunshine in which it basked on the Egyptian plain, from the shores of the Nile, from Thebes, from Gezeh and the Libyan Desert, it resembled the petrified mummy of a race no longer existing, of a genius which had passed away—an emblem of another world. And so it is of an Eastern or African world,—that is, mind, with which neither Gaul nor Saxon have a spark of consanguinity: all is heterogeneous (I had almost said ludicrous), for from the sublime to the ridiculous there is but a step.

Around the obelisk flits the gay, busy, trifling mob of Paris. They look at it and wonder what it means. They have some recollections of Egypt, it is true, and that their great emperor was once there. That is all: the rest had better be forgotten. The *Grand Ouvrage sur l'Egypte* is a much nobler *memento* of their expedition. No military trophies (supposing them appropriate in this case), can be compared with this. The French expedition to Egypt produced the *grand ouvrage sur l'Egypte*, and nothing more: the English descent on the land of the Pharaohs led to the capture of the trilinguistic stone of Rosetta and the dislodgment of the French: that is all. Egypt remains precisely where it was,—barbarous, savage, uncivilized. Neither Roman, nor French, nor English interference has ameliorated her lot; a fact which historians will relate without the aid of any obelisks, however obtained.

Should any one ask me then why the French transported an Egyptian obelisk to Paris, I should feel at a loss to answer him, and I am sure that the Parisians themselves would be equally at a loss. It is no embellishment to their modern city, the representative of Celtic taste; its very form and meaning incomprehensible to the Celtic and European mind. It cannot be intended to mark by it that they were once in Egypt: history will secure this recollection, and also the fact that Menon surrendered the country, and with it the black stone of Rosetta, to an English force. Why, then, erect a pyramid or obelisk on the soil of France? If by doing so you think to immortalize the greatest of men who led you there, I beseech you, in the name of common sense, to give it up. The name of Napoleon will be fresh in the memories of men when your race and nation have vanished from the earth.

And now, having endeavoured at least to show the false step committed by the French people in erecting an obelisk in their capital, I am prepared to hear some one say, What would you propose doing with it? how would you dispose of it? These questions bear directly on the proposed removal of the Egyptian obelisk to London. Let me speak first of the Parisian one.

There can only be two modes proposed of disposing of the Parisian obelisk. The first is, to send it back to Egypt, and with a solemn request to the present cut-throat Government, that, in consideration that mankind has a history, that they are not mere beasts, and, above all, that in the history of Egypt is deeply involved the history of civilization and of the human race, the rulers of the valley of the Nile will at least protect those monuments they never did nor ever will comprehend.

The next best mode of disposing of the Parisian obelisk is, to transport it to the shores of the Mediterranean, and there, on the lonely sea-beach, apart from all other objects, raise up that obelisk as near as may be to the spot on which stood, prior to the embarkation for Egypt, the mighty Napoleon.

The Egyptian expedition was a comparatively *profitable* one to England, and therefore, and more especially since the French have got their obelisk, the English have resolved to have theirs. But, supposing the obelisk fairly transported to London, and safely deposited near Westminster or London-bridge, have you thought of where it is to be placed? Where will you erect this emblem of the Coptic mind? of the dreamy race who imagined and built Carnak, and the Pyramids, and the Memnonium? remains of a race to which you and your buildings—your big glass house, and your big nunnery at Westminster-bridge—your eternal common-place—your model houses and model churches are wholly antagonistic? Will you erect this mighty shadow of the remote past in Trafalgar-square?—or in the park?—or in the Tower?—or at Wapping Old Stairs? Or will you turn it to account, as is your nature, and set it *somewhere* where it may be *useful?*—place a gaslamp on its summit, erase some of the hieroglyphics to make room for the letters V. and A., and the name of the then Lord Mayor? From what you have already done none of these steps would surprise me or any other person who had lived some time in London.

As with the Parisian obelisk, so it is with the one which England purposes bringing from Egypt. There are two ways of disposing of it: the first is, to leave it in Egypt, urging on the ruler of the country to respect the remains of antiquity: but should it be brought to England, avoid London, that heterogeneous mass of attempts at all the architecture of the earth: avoid placing this graceful and beautiful object in contact with a race who understand it not; to whom it is not merely foreign in the ordinary sense of the term, but wholly antagonistic to their mental characteristics. Do not allow men's ears to be afflicted with the painful question of the Saxon utilitarian, what is the use of it? how much did it cost?—it is not so high as St. Paul's, and nothing like the Duke of York's monument in thickness. Spare us these dreadful questions, which are sure to be asked daily by thousands of London's educated and polished people. This you may easily do. The obelisk can have with the British mind but one association—Nelson. Sweep from the beach of Southsea those dreadful-looking figures to which I alluded in my last letter to you,* and erect in their stead, close to the entrance of your great naval harbour, this obelisk, raised on a base or pedestal of Egyptian granite corresponding to that on which it once stood. Erect it, at least, in sight of that harbour from which sailed the armament on whose success depended your existence as a nation; and as near as may be to the spot where embarked the man on whom your fate depended. Be for once dignified. Forget the "Gallic cock:" consign him, with the "British grenadier," to the pot-house frequenters. Leave gasconading and bravadoes to your younger brethren, on the other side of the Atlantic: even they will become ashamed of this, with time. And should any one inquire of you what brings this obelisk here, standing alone upon this lonely beach, you may point to the letter N cut deeply on its granite basement.

R.

AMERICAN ART AND ARCHITECTURE.

The Astor Library.—We learn from the *New York Journal of Commerce*, that the building for the Astor Library is now being plastered, and will be ready for occupation in the course of next spring. Its dimensions are 65 feet front and 120 deep, and it covers the whole lot. It is 70 feet high, and is built of brick, with a basement faced with brown stone, and is without pretension in its architecture. The building is to cost, including the ground, 100,000 dollars, one-fourth of the sum applied by Mr. Astor to the whole object. The rear of the building is devoted to the purposes of a lecture-room, and its walls are lower than those of the main structure, so that light and air are admitted from the front and rear, and also from the top, into the library room, which constitutes nearly the whole of the interior of the main structure. The floor of this room is elevated about 20 feet from the ground, and is ascended by means of a wide stone staircase, which rises from the vestibule of the building, and terminates in the centre of the library. Having reached this point in the large room, one stands immediately under the dome, which lets down a flood of light on the main floor, and on the gallery situated midway between it and the roof. From the presence of frequent light columns reaching from the main floor to the dome, and supporting partially the gallery, it would seem that the shelves for books are to reach from these columns to the wall, at right angles to the wall, and thus form alcoves on each floor, opening towards the light and closed on three sides, in which a person consulting the books may ensconce himself. The feature about the building most to be commended, considering the uses to which it is to

* See p. 768, *ante*.

be applied, and the importance of preserving the library for ever, is its construction in a mode to prevent injury to books, and to guard against fire. The walls of the building are hollow, which permits the plastering to be laid immediately on the bricks, instead of on laths nailed to furring, according to the common practice.

State-house at Columbus.—We understand that the new State-house, now erecting at Columbus, Ohio, will be, when completed, a magnificent edifice, far surpassing any similar state public building in the country.

Public Parks.—The *Boston Evening Transcript* says:—Why will not our cities, great and small, old and new, make timely and liberal provision for public parks, before land has become so high as to become unpurchasable for such objects? Shall the experience of ages—and the "precepts upon precepts" of physiologists and physicians have no effect? The County Medical Society of Philadelphia have lately had a meeting, at which they adopted strong resolutions on the subject.

American Sculptors in Italy.—A correspondent of one of the American papers gives particulars of all the American artists in Italy. He says,—Powers's studio is filled with the works of his mind, and is resorted to by all the American and many of the English tourists. His allegorical statue of California is a fine work of art. It is now nearly ready to be cut in marble. Greenough has nearly completed his great work for the capital. He is now on a tour through Switzerland, having left Florence some two months ago, to refresh himself after a hard year's labour. Kellogg, the painter, has recently returned, after an absence of four years in the United States. He is now engaged in making some paintings descriptive of Oriental life. Among the attractions in Florence at this time, in the way of modern art, is the statue of "Ruth," by Mr. Randolph Rogers, of New York. The hair falls in long natural masses over a neck and shoulders of exquisite form and delicacy. In one hand rests a few ears of wheat, and the other seems timidly arrested over the scattered stems, as if she hesitated in the continuance of her task before the great Boaz. One knee is still upon the ground, and the other slanted as if in the act of rising: a loose robe falls over the left shoulder, and the folds of a cincture cover the lower portion of the figure, leaving the outline distinctly developed. I understand that it has been purchased by Mr. Dudley Seldon, of New York. Mr. Hart, the Kentucky sculptor, is busily engaged upon a round of ideal studies. Kentucky may well be proud of the stone-mason, who, rising from his humble sphere by the unaided force of his talents, modelled the best bust that has ever been made of Kentucky's greatest statesman. Mr. Galt, of Virginia, is engaged upon a bust of Psyche, which, I understand, has been ordered by the young men of his native town, in token of their high appreciation of his talents.

Brick Machines.—Amongst the recent patents we find several for improvements in brick machines. J. Riddle, of Kentucky, says:—"The object of my improvement in the manufacture of brick by machinery, is to bring and maintain an equal pressure upon all parts of the brick when in the mould, and thus to avoid a disturbance of the substance of any part subsequent to pressure, and the consequent liability to crack and separate. Having thus fully described the nature and construction of my improvements in brick machines, what I claim therein as new, is the block or lip, substantially as described, hugging closely the mould wheel, immediately behind its point of contact with the pressure roller, in order to prevent any disturbance of the mass after having passed the point of contact." Isaac Gregg, Pennsylvania, says:—"What I claim as my invention, is the placing the auxiliary pressure roller, or its equivalent, between the main roller and the knife, for the purpose of subjecting the surplus clay, after it is elevated above the tops of the moulds, to the action of pressure, before removing the same by the said knife, substantially as herein set forth. I also claim the subjecting the upper surface of the clay in each mould to a rubbing pressure by means of a plate or its equivalent, placed above the tops of the moulds, in combination with some mechanical device for forcing up the moveable bottoms of the said moulds, whilst passing under the said plate, substantially in the manner and for the purpose herein set forth."

Iron Tombs.—In the list of designs registered is one by H. K. Finchbaugh, Pennsylvania, for a cast-iron "cemetery tomb," ornamented as described.

Mortising Machine.—A very ingenious rotary mortising machine has been put in operation in Phila. It consists of a circular saw, so constructed as to make a perfectly true, square, and clean mortise of any dimensions, in either hard or soft wood, and completes the work in about the same time required to remove the chips of the ordinary machinery. The operation of the machine is effected by placing the board edgeways upon an iron bed, which is balanced above the saw by weights suspended on either side of the framework. The bed is moved downwards, and by this process the saw passes through an opening in the bed, and is brought in contact with the wood, through which it cuts instantaneously.

Steam Stone-cutting.—Not long ago, Mr. Charles Wilson, of Springfield, Mass., invented a machine for dressing and rubbing stone, which has proved, in practical application, to be astonishingly effective. The dressing of stone by hand will soon in a great measure be done away with. The slow plodding of the mallet and chisel contrasts strongly indeed, with the rapid evolution of the steam cutter. At the foot of 28th-street, East River, New York city, the works of the Empire Stone Dressing Company are located. The establishment is conducted on a most extensive scale, occupying about five acres of ground, and employing a steam-engine of 100 horse power. Huge blocks of stone are lifted by steam from the vessel at the dock, and placed upon a railroad track extending to the main building, and conveyed by means of a truck to the remarkable machine. The adjustment of the cutters is but the work of an instant, and then, by the push of a lever, the stone chips begin to fly like shavings from a board. One of these machines can do more work in ten minutes than a man can do in a whole day by hand. Our mechanical readers can form an idea of the appearance of the steam stone-cutting machine when we tell them that it closely resembles Daniel's board-planing machine, the cutters of which are placed at the extremity of horizontal arms, and with them revolve, cutting the wood as it passes slowly along below. The cutters of the stone machine consist of small thin steel wheels sharpened to an edge, so that, while passing over the stone, they revolve, but at the same time cut. It is in this peculiar formation of the cutters that the value of Wilson's patent consists.

Ease for Man.—By the year two thousand, says an American paper, it is probable that manual labour will have utterly ceased under the sun, and the occupation of the adjective "hard-fisted" will have gone for ever. They have now, in New Hampshire, a potato-digging machine which, drawn by horses down the rows, digs the potatoes, separates them from the dirt, and loads them up into the cart, while the farmer walks alongside, whistling "Hail Columbia," with his hands in his pockets.

Hotels.—New York probably is destined to become one vast assemblage of spacious hotels, with magnificent stores under them. The Cooper House, in front of Niblo's theatre, is drawing towards completion, and will be opened before May. This will be one of the largest houses of entertainment in the world. It will contain six hundred rooms, which is two hundred more than the Astor. The St. Nicholas, also, is assuming its beautiful marble front apace, and will be ready for occupancy when the birds and merchants come back.—*Home Journal*, Nov. 22.

Art-Union of London in America.—The subscription-list to the London Art-Union, at Boston, to the present time, numbers 189. The engraving for the present year, "An English Merry Making in the Olden Time," may be obtained at once, both there and in England.

Tile Fronts to Houses.—Fronting houses with tiles has been introduced into Philadelphia. The tiles are four inches thick, cut into squares, and cemented together by the ordinary process. They are of white clay, with exceedingly close grain, are differently coloured, and hardened by the highest heat used in the manufacture of earthenware. The surface presents the smoothness of glass, and the colours are vivid.

RECOLLECTIONS OF VENICE.

HISTORY, poetry, and art, have given associations to Venice which cannon-balls cannot destroy. There seems every reason, however, to expect, that many of the material pegs on which they hang, remnants of ancient beauty touched but with gentle hands by Time, will yield to "villanous saltpetre," arrangements having been made by the Austrians to effect their destruction on the first convenient opportunity. With increased gladness, therefore, we hail the progress of Mr. Ruskin's Examples of its architecture, and earnestly hope that Mars may be kept down, and Apollo and the Muses remain in the ascendant, at all events long enough to enable him to complete his work.*

A first visit to Venice is, indeed, a delight. Every thing about it is novel to a foreigner, and full of fascination. What is that long, low wall, with openings in it to let the tide through? "This is the railroad bridge, conspicuous above all things. But at the end of these dismal arches there rises, out of the wide waters, a straggling line of low and confused brick buildings, which, but for the many towers which are mingled among them, might be the suburbs of an English manufacturing town. Four or five domes, pale, and apparently at a greater distance, rise over the centre of the line; and the object which first catches the eye is a sullen cloud of black smoke brooding over the northern half of it, and which issues from the belfry of a church. It is Venice."

After traversing the railway bridge, nearly a mile and a-half in length, which stretches across the Lagoon, the first words which greet the ear on emerging from the station are, "Gondola, Signore?" and you, with your "impediments," are wafted to your hotel in this very un-English railway cab. But even in Venice the merely useful gradually drives out the ornamental, and the apparition of ugly, yellow, barge-looking craft, with "*Omnibus alla Strada Ferrata*" painted on them, gives a shock to one's romance. On all sides one is reminded of what our own poets have said of the sea-girt city. Byron's memory still haunts the spot his genius has immortalized. One sunny afternoon, a few weeks ago, the writer was taken across in a gondola to the Armenian Convent, whither Byron went to study the language. On asking the *père* who accompanied us over the establishment, if Byron's name were still remembered there, he answered with energy, "Oh yes, and we are now about to print in English an Armenian work which he translated." This convent contains at present about fifty persons, twenty *pères* and thirty scholars. Even going to and returning from the theatre at night in a gondola, as many of our readers will remember, has in it something romantic; leaving the brilliantly-lighted house and coming out immediately on to the dark water, with the strange outlines of the black gondolas dimly shown by the glare of a torch, or the glimmer of the rowers' lanterns. The Fenice is a handsome house: the decorations are white and gold; but it was only half-full when we were there, and looked cold and deserted. Soldiers with fixed bayonets were stationed at intervals in the pit, and out of a group of fifteen persons near the centre entrance, seven or eight were in military costume.

We have no occasion to speak of the

* Examples of the Architecture of Venice, selected and drawn to Measurement from the Edifices. By John Ruskin. London: Smith and Elder; P. and D. Colnaghi. 1851. Parts I. II. and III.

Cathedral of S. Mark, with its profusion of marble columns, its bronzes, and its endless mosaics, covering the ceilings and walls of the interior, and the alcoves and gable exteriorly. Notice the statues before the high altar, four of which—the Evangelists—are by Sansovino. On the left, and opening into the sacristy, is his famous bronze door, on which, say they, he expended twenty years of life. You will notice it is divided into two panels, the subjects being the Death of Christ and the Resurrection: in the border are some exquisite busts, one of which—forming the handle to the door—is Sansovino's portrait. By accident, it bears, too, a strong resemblance to Byron. Many of the delights of Venice are not to be described: it should be seen to be appreciated. Who that has been there will not remember some half day spent leaning over the balcony, shaded from the sun, and in the soft, mild air—too warm to suggest the idea of taking cold, but sufficiently cool to be enjoyable,—and contemplating the waters of the *canal grande* sparkling in the sunshine, and incessantly stirred into motion by the silent oars of the dusky gondolas, bearing gaily-dressed pleasure-seekers, or busy lionizing English, *Murray* in hand? Immediately beneath stretches the broad quay, crowded with vendors of water, fruit, cigars, and cakes: eager pedestrians are hurrying to and fro; and lazy *gondolieri* are sleeping in the sunshine while waiting to be hired.

There are, it is true, many melancholy spots of desolation in Venice, and even on this same canal, only a hundred yards farther on, the eye rests with regret on once beautiful palaces now mouldering into ruin, their noble steps jarred and broken with the transit of coarse burdens, and their magnificent halls degraded into store-rooms for wood and coal. Nevertheless Venice is still lovely, even in desolation and decay, and fruitful in suggestions. As one says truly, "Her history is written upon her front, from the rude massy frowning architecture of barbarism and power, to modern elegance and imbecility."

The three parts already issued by Mr. Ruskin contain plates mostly of detached portions of buildings on a large scale. Some are given in mezzotint (which accurately conveys the peculiar style of drawing adopted by the author), and others in tinted lithography. Mr. Ruskin says, "In completing studies of this kind, it has always seemed to me, that the most expressive and truthful effects were to be obtained (at least when the subject presented little variation of distances), by bold Rembrantism; that is to say, by the sacrifice of details in the shadowed parts, in order that greater depth of tone might be afforded to the lights." The result of this system is a strong resemblance in many of the plates to copies of daguerreotypes. Plate 2.—Arabian windows, in *Campo Santa Maria Mater Domini*, is a good example of this. A curious point is observable in this, and in nearly every group of windows in Venice belonging to this transitional or Arabic period, which is, that one of the lateral openings is larger than all the rest!

The southern portico of St. Mark's, a Byzantine ruin, in *Rio di Ca' Foscari*, with a conjectural restoration, and three plates of doorheads, are amongst the most interesting examples in the work. The doorways of Venice are almost always formed by an arch or gable above a horizontal lintel, the enclosed space being sometimes left open, and merely defended by iron bars; sometimes filled with masonry, and charged with ornament. "The methods of doing this are various and beautiful; but in the earlier ages, all agree thus far, that the name of the family is told, and, together with it, there is always an intimation that they have placed their defence and their prosperity in God's hands; frequently accompanied with some general expression of benediction to the person passing over the threshold."

Enough, however, of Venice just now: Mr. Ruskin's future parts will enable us to return to it, and always with pleasure:—

"Her palaces are crumbling to the shore,
And music meets not always now the ear:
Those days are gone. But Beauty still is here."

THE ROYAL ACADEMY MEDALS.

GENEROUS EMULATION.

All were extremely gratified to hear from the lips of the President of the Royal Academy, on the 10th inst., when the prizes were distributed, the compliment paid by Sir C. Eastlake to the talent of the unsuccessful architectural student, who missed the prize because he had not climbed to the top of Bow spire to measure the actual height of the uppermost feature of the composition. He said it was the unanimous opinion of all the architectural members that a more beautiful set of drawings had never been submitted for the silver medal. The refusal of the Council was wise and just, not to admit into the competition one who had not fulfilled the strict letter of the conditions,—to make the drawings from actual admeasurement; and all must lament the want of energy, determination, and spirit, which induced the student to fall short of his duty. It is said, however, that, by a curious chance, there was a great variety in the proportions of those who had measured the spire, and he was the mean between their extremes.

But I am anxious to express my disbelief of a report, current in the rooms at the time, that the other competitors, fearful of the superiority of their rival, had memorialised the Council to exclude him on the ground of non-compliance with the instructions. I cannot believe so ungracious a proceeding. I would rather imagine our young friends, with a generous enthusiasm creditable to themselves, and from respect for the brilliant talents of their able antagonist, if they had thought of the possibility of exclusion, to have prayed the Council to have still allowed him to compete; rather than upon a question, not involving an error of serious amount, to get rid of a dangerous rival, in order to secure the prize to those second in merit in point of execution. Such a proceeding would have been honourable, and would have impressed this noble principle upon their minds for their future struggles in life,—that in a liberal profession it is not merely he who is successful, but he who is successful honourably and generously, that wins the respect, the confidence, and esteem of those around him.

Thos. L. Donaldson.

University College.

IRISH ARCHITECTURAL AND RAILWAY NOTES.

The Royal Irish Beet Sugar Company are converting extensive premises at Mountmellick, in the Queen's county, into a factory. The works are at present in active operation, all the necessary surveys and plans having been completed. The buildings will contain crystallizing and defecating pan, press and engine rooms, &c. Eighty-one packages of machinery, and 301 packages of animal charcoal, have been forwarded from Antwerp, and it is confidently expected that all the machinery, which is being fixed under the inspection of the manager and patentee, Mr. H. Crosley, of London, will be in a fit state to turn out the first produce about the middle of December. At Donaghmore, also in the Queen's county, a cutting and drying station is being established, and all the necessary plans, &c., have been furnished for the immediate erection of the required buildings. Factories will also be erected by the company at Cork, Belfast, Galway, and other provincial towns, and a model depôt is to be built at Dublin, when the experiment receives a fair trial. Several contracts have been entered into with the neighbouring landed proprietors, and the new factories will give great employment to the poor.

The Lords of the Admiralty have applied for tenders (for the erection of the new pier at Queen's-town) to two London, three Dublin, and five Cork contractors.

The Limerick and Foynes railway is being marked out: the first sod will be shortly laid: there will be stations at Limerick, Patrickswell, Adare, Rathkeale, and Foynes. Mr. Dargan, the contractor, has subscribed 10,000*l.* and the Waterford and Limerick Company a similar sum, towards its construction.

A new flax spinning manufactory is to be erected at Lough Erne, near Ballyshannon, and Thos. Connolly, Esq., M.P., has given a free site for the purpose.

The Midland Great Western Railway Company are about having the electric telegraph constructed between Dublin and Galway. The new terminus at the latter place, fully described by us some time since, is almost complete. The corrugated iron roof, 400 feet long by 80 feet wide, in single span, has been constructed and finished by Mr. Richard Turner, of Dublin. The stone work of the hotel (which fronts Eyre-square, and which is being erected by the company in connection with the terminal buildings) is in a forward state, and a large number of hands are at present engaged in its erection by the contractor, Mr. Dargan.

Sundry works are to be executed at the Tullamore and Listowel auxiliary workhouses, and a new drying closet at Mullingar, under the direction of the architect to the poor-law commissioners.

During 1852, or early in 1853, railways will be finished and opened from Mallow to the Lakes of Killarney, from Dublin to Bray and Wicklow, and to Belfast over the Boyne.

NOTES IN THE PROVINCES.

Upton (Slough).—The venerable old church of Upton-cum-Chalvey has, at length, in accordance with our wishes, been restored, enlarged, and reconsecrated. The building has been completely restored, internally and externally, and a new aisle added. The seats are all open, and half of them are free. The groined roof of the chancels has been restored to its original character under the hand of Mr. Willement, who, at his own expense, has placed two stained-glass windows over the altar. There is a third stained-glass window near the pulpit. The nave is now double its ancient dimensions. The south porch, an enriched Norman design, forms the principal entrance. The outer wall has been made principally out of the old materials: the flints and pieces of conglomerate, which had defied the weather for the last 800 years, have all been worked up again. The old wall, it is said, was firm as a rock, and the hardest portion of the contractor's work was the getting it to pieces. A vestry-room has been added as a sort of lean-to to the tower. Built up in the wall, on the south side of the chancel, near to the altar, was found an ancient *piscina*. It has been preserved in the position where it was found. Two arches, 20 feet in height, form a new foundation to the tower, and are the means of communication to the chancel on the one hand, and the nave on the other. On the north wall of the tower has been replaced the monument to the great astronomer, the elder Herschel, who was an inhabitant of Upton, and lies buried in the church. In the southern wall of the nave was found a figure about two feet high, wrought in alabaster, of the Holy Father holding the Son, on the cross. The head of the principal figure is wanting, and the other portion is broken. Whilst repairing the walls of the nave, some other relics of antiquity made their appearance. There were traces of colour in every direction; but the colours had been so eaten into by the lime, that it was seldom that even the outline could be guessed at. The architect was Mr. Ferrey. The mason work was executed by Mr. George Harley, of Slough. The other portions of the building were completed by Mr. Snowball, of Slough, who took the contract. Stoves were put up by Mr. Potter. The total cost is estimated at about 1,600*l.* nearly the whole of which has been raised.

Hastings.—Amongst recent improvements here, is the erection of a new assembly-room and market-room, which was lately inaugurated in the latter capacity.

Hythe.—New national schools were opened here on Tuesday week. They are situate at the west end of the town, facing the public green, and are in the old English style. The walls are of native stone (presented by Mr. William Deedes, M.P.) The windows and porches have mouldings and dressings of Caen stone. The roofs are covered with ornamental

tiles: the ridge tiles are also of ornamental design. Internally, the walls are plastered and the roofs open and stained. The buildings provide accommodation for 160 boys, 160 girls, and 160 infants. Each school-room has attached a class-room and a room for hats, cloaks, &c., and each has a separate entrance for visitors and for children. In the centre of the group is the master's residence, its architecture partaking more of a domestic character. Attention has been paid by the architect to the classification, ventilation, and drainage. The whole of the works have been done by the Messrs, Horton, builders, from the drawings, and under the superintendence, of Mr. J. Messenger, of Folkestone and London, architect.

Southampton.—The new inner dock, for colliers and sailing vessels, has been opened, and is now in use.

Salisbury.—Mr. Sidney Herbert is causing to be fitted up a large and commodious lodging-house for as many of the unmarried labourers of the parish of Wilton as may be disposed to take the benefit of it. The house will be furnished with every convenience, and a housekeeper will be provided. The meals will be at stated hours, and the dietary will be ample but plain, and each inmate will have a separate bed. A library will be attached, and as one of the curates of the parish church will reside in a part of the house, he will occasionally deliver a lecture to the labourers. For all these advantages each labourer is to pay 4s. 1d. a week only.

Cardiff.—The tender of Messrs. Hemingway and Pearson, says the *Cardiff Guardian*, for the formation of new docks, has been formally accepted by the trustees of the Marquis of Bute. The contract will involve an outlay, *it is conjectured*, of 250,000*l.* to 300,000*l.*: that sum will be laid out in forming the docks alone, as they are to be extremely spacious. The time for commencing is stated to be in February.

Wolverhampton.—It is proposed to apply to Government for aid in the establishment of a School of Design for South Staffordshire—the principal school to be established in Wolverhampton, and elementary schools to be instituted at Lichfield, Walsall, Dudley, West Bromwich, Bilston, Tipton, Wednesbury, Sedgley, and Willenhall.

Rochdale.—A stained-glass window by Willement has been placed at the east end of the parish church of Rochdale. It consists of five compartments. Under four of these are the arms of the donors, the Vicar, Mr. James Dearden, lord of the manor of Rochdale, Mr. R. G. Townley, M.P. for Cambridgeshire and Belfield, in Rochdale, and the Newalls of Townhouse and Littleborough. The fifth compartment has no coat of arms, but is understood to have been contributed by the Chadwicks of Oakwood.

Coalbrookdale.—The foundation stone of a new church has been laid in this village. The cost of erection, together with endowment and parsonage house, is the gift of Mr. Abraham Darby, of the White House, Coalbrookdale, and Stoke Court, Buckinghamshire, chief partner in the Coalbrookdale Company. The workmen of the company have resolved to present a peal of eight bells. The architects are Messrs. Reeves and Voysey, of London; and the builder, Mr. William Hinley.

Preston.—It is proposed to apply to Parliament for powers to build a covered market between Cheapside and Chapel-walks, Preston. The market will be 110 yards in length and 60 yards in width. The plan includes a new street leading out of the market-place and 20 yards wide. Other improvements are projected in connection with the scheme.

Halifax.—Mr. John Crossley, ex-mayor of this borough, has fitted up Muleture Hall, the oldest mansion in the town, as a model lodging-house. The parlours and drawing-rooms have been converted into large store-rooms, reading-rooms, and dormitories. Spacious kitchens, with cooking apparatus, have been fitted up, and a large washhouse appropriated to the use of the inmates. The lodging-rooms are fitted up with every convenience, and the whole fitted up with gas, and ventilated. The number of inmates will be restricted to fifty, and no females will be admitted. The charge will be 3d. per night's lodging.

Wigan.—A Temperance-hall is to be erected here by a company, in 3,000 shares of 1*l.* a share.

Edinburgh.—Various public buildings have been slightly injured by a recent gale. At Stewart's Hospital some damage was done to incomplete parts of the building, and two of the small turrets on Newhaven Church were blown down. Chimneys and chimney-cans by dozens appear to have been brought down by the wind.——"Steeple Jack" has had a "Government appointment" to put up a lightning-conductor on the Assembly-hall spire. The main conductor is to be a solid copper rod, three-quarters of an inch in diameter, provided with a platina point. This passes down the spire and enters the ground, under which it runs for some distance away from the building. The other turrets connected with the building are also to be protected by rods—the whole system joining with the great conducting rod. Although this building was not very long ago struck by lightning, and, although, standing on the castle hill, with a spire towering upwards to a farther height of 240 feet, its pinnacle forms the highest and most prominent object in this hill-seated city, the corporation on being applied to by the Woods and Forests, refused to be at any expense in the erection of a lightning-conductor to a public building which thus not only stood in such perilous need of it, but which was actually built partly out of the City funds, managed by this same corporation. The Woods and Forests fortunately were not only wiser, but more liberal or less stickling and punctilious, and ordered the conductor to be put up at their sole expense. No scaffolding, however, will be needed in Steeple Jack's process, so that the expense cannot be great.

THE APPIAN WAY.

A NOTE FROM ROME.

I LEFT Rome by the S. Sebastian-gate, drove along the course of the Appian Way—the old pavement often showing—passing the Circus of Romulus, the tomb of Cæcilia Metella, and entering upon the open Campagna, about four miles from the city walls. Here begin the new excavations making for the purpose of giving a direct road from Rome to Albano—restoring it nearly to the course of the old Appian Way. A considerable number of workmen have been employed in blasting and destroying those of the frequent shapeless masses of old unknown tombs which are in the way, in levelling road, and in carefully excavating its foundations, so that nothing worthy may be buried, in pursuing on either side anything that offers to tempt the search. All that are found of ancient remains are collected and stored up temporarily on the roadside (being numbered for the sake of reference): the best are removed at once to the Vatican: the imperfect and inferior ones remain till further search may have brought to light other portions; or if still found unworthy of removal, to be built into those sorts of monumental walls by the road side, suggested by Canova for this purpose, and already made by him in the first part of the Appian Way. The utterly useless fragments are broken up to make the road, or to build the loose stone walls that on either side line and enclose the road, and on which are painted numbers corresponding to those painted on found fragments. The lesser articles, as bronzes, lamps, &c. are placed in a small temporary building close by the office of the superintendent, whence they are every day or so removed to the Vatican. It was here I procured the lamp I now send you for the Noviomagians*—of no peculiar value in itself, as it is well known these are common enough, but from its genuineness, and having procured it myself on such a spot of great interest and value to me: I remained at the excavations,—sometimes wandering about watching the workmen, who each minute would turn up something fresh—here a fragment of a statue, there a frieze—an inscription—a broken column—uncover perhaps a tesselated pavement, or often would break through into a tomb, on looking into which would be seen the bones, cineraria, lamps, &c., *in situ*, as first placed. The constant interest of this can be conceived by all, while those who have been to Rome know well how beautiful is the surrounding scenery: the fine open Campagna, with its long, though broken, lines of arched aqueducts; its frequent masses of ruins; the near foreground occupied by buffalo, and herds of the famous dun-coloured oxen, tended by wild-looking and skin-clad men; the near hills of Albano, Frascati, Tusculum, Tivoli, &c., beyond; the snow-covered Apennines, and, above all, the brilliant Italian sky, all formed a glorious *scena* that will ever be to me a most grateful recollection. F. W.

* The "Noviomagians" are a quaint unpretending club of Fellows of the Society of Antiquaries, who dine together once a month during the season, at an odd place, next Joe Miller's burial place, in Portugal-street, for the promotion of good fellowship and antiquarian pursuits. The present members are Mr. Crofton Croker (who has been president more than twenty years), Mr. G. R. Corner, Sir William Betham, Mr. Fairholt, Mr. Godwin, Mr. S. C. Hall, Mr. Lemon, Lord Londesborough, Mr. Comptroller Saunders, Mr. Stevenson, and Mr. W. Wansey. The late A. J. Kempe was one of its founders on the occasion of the discovery of the ruins of *Noviomagus*. Joking minutes are kept, in which would be found many known names, either as visitors or associates, —Theodore Hook, Sir Henry Ellis, Britton, Dickens, Thackeray, John Bruce, Jerdan, Planchè, Bell, Maclise, &c. &c.

NOTE FROM DERBY.

THE gas company here have been making extensive alterations at their works, consisting of a new gas-holder, 90 feet diameter by 25 feet deep, calculated to hold about 152,000 cubic feet of gas, constructed and erected by the Horsley Iron Company, of Tipton, Staffordshire. The tank, 93 feet diameter, was excavated and built by Mr. John Wood, contractor, of Derby: larger pipes have also been laid in the works and town to meet the increased supply required for this fast improving town.

New waterworks, as our readers know, are now in operation, constructed on the system of constant supply, at a high pressure, from the plans of Mr. Hawksley, who has introduced a new "service box," to be used with the common earthenware soil-pans: these boxes are supplied to customers by the water company at a small rental, thus diminishing the cost of water-closets to the labouring classes. This "service-box" is constructed to prevent undue waste of water by constantly running through the closets: the act of opening the valve to supply the closet shuts off the supply from the main by means of a new plunger cock.

The "*Hydrant*," an improvement on the old fire-plug, has been extensively used, and is fixed in every street where the mains are laid, for the purpose of extinguishing fires, as the hose and other apparatus can be attached in a very short time, and, where the pressure is sufficient, no fire-engines are required. The above works were constructed by the following parties:—

Pipe Laying and Services.—Thomas Crump, Derby.

Buildings.—Charles Moody, Derby.

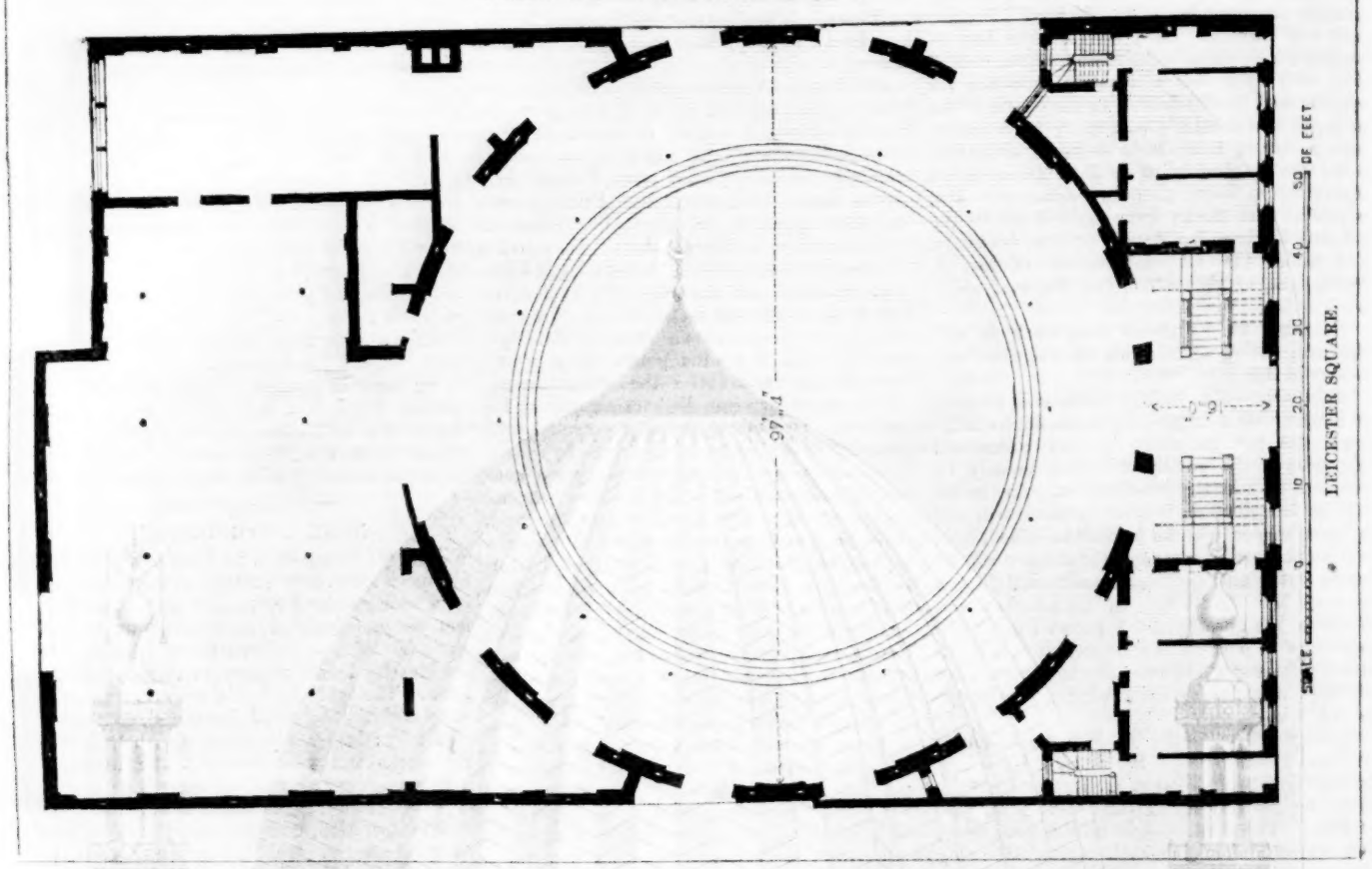
Reservoirs and Culverts.—Robert Carlisle, Beighton, Yorkshire.

Engines and Pumping Apparatus.—R. W. Hawthorn and Co., Newcastle-on-Tyne.

PARK-LANE, PICCADILLY.—With reference to the great necessity for enlarging this thoroughfare, it appears to me that the *only* and *obvious* improvement is to carry a road directly through *Hamilton-place* in a straight line to Stanhope-gate, of course cutting through the triangular garden, which, together with the site upon which Hamilton-place and the terrace stand, has been filched from the park, and therefore from the public, as the old maps of London prove. There would be doubtless a great outcry of the aristocratic inhabitants about making Hamilton-place a thoroughfare, and the high-bred peripatetics of the garden in question will vote this arrangement a nuisance,—a horrid bore; but this and all other complaints should not stand in the way, the improvement being for the safety and comfort of thousands.

FLAT-FOOT.

PLAN OF THE PANOPTICON.



ROYAL PANOPTICON OF SCIENCE AND ART.

The space on the east side of Leicester-square, long vacant, is now being covered with a building, as our readers have already heard, for the Panopticon of Science and Art, and in our present number we give a view and plan of the intended structure.

The objects which it is the intention of the council of this institution to carry out are principally the promotion of science and the useful arts, by the means of popular lectures, and the illustration of history and literature by pictorial views and representations, to be accompanied by music. In addition, however, to these attractions, the Panopticon, it is said, is to afford the opportunity of observing, in all their varied ramifications, the industrial and mechanical arts, from the first state of the raw material up to the most highly-finished stage of perfection. The council propose to secure in all respects the most efficient auxiliaries, both as regard music and science; and the orchestral instrument, which is now in process of construction by Messrs. Wm. Hill and Co., will, it is stated, be second to none in the metropolis, while the scientific apparatus will embrace, among other novelties, a stupendous electrical machine, with a glass plate of 10 feet diameter, which it is proposed to work by means of a steam-engine.

An important feature in the intended arrangements of the Institution is a plan whereby a great impediment to the success of Mechanics' Institutes, particularly in the country, may be removed: it has been found that the funds of such societies are seldom sufficient to procure the requisite apparatus for the illustration of their lectures, which are consequently divested of much of their interest, and in order to obviate this difficulty, the council of the Panopticon propose to form a large collection of apparatus, suitable for lectures in every branch of natural and experimental science, which will be lent out on hire upon moderate terms.

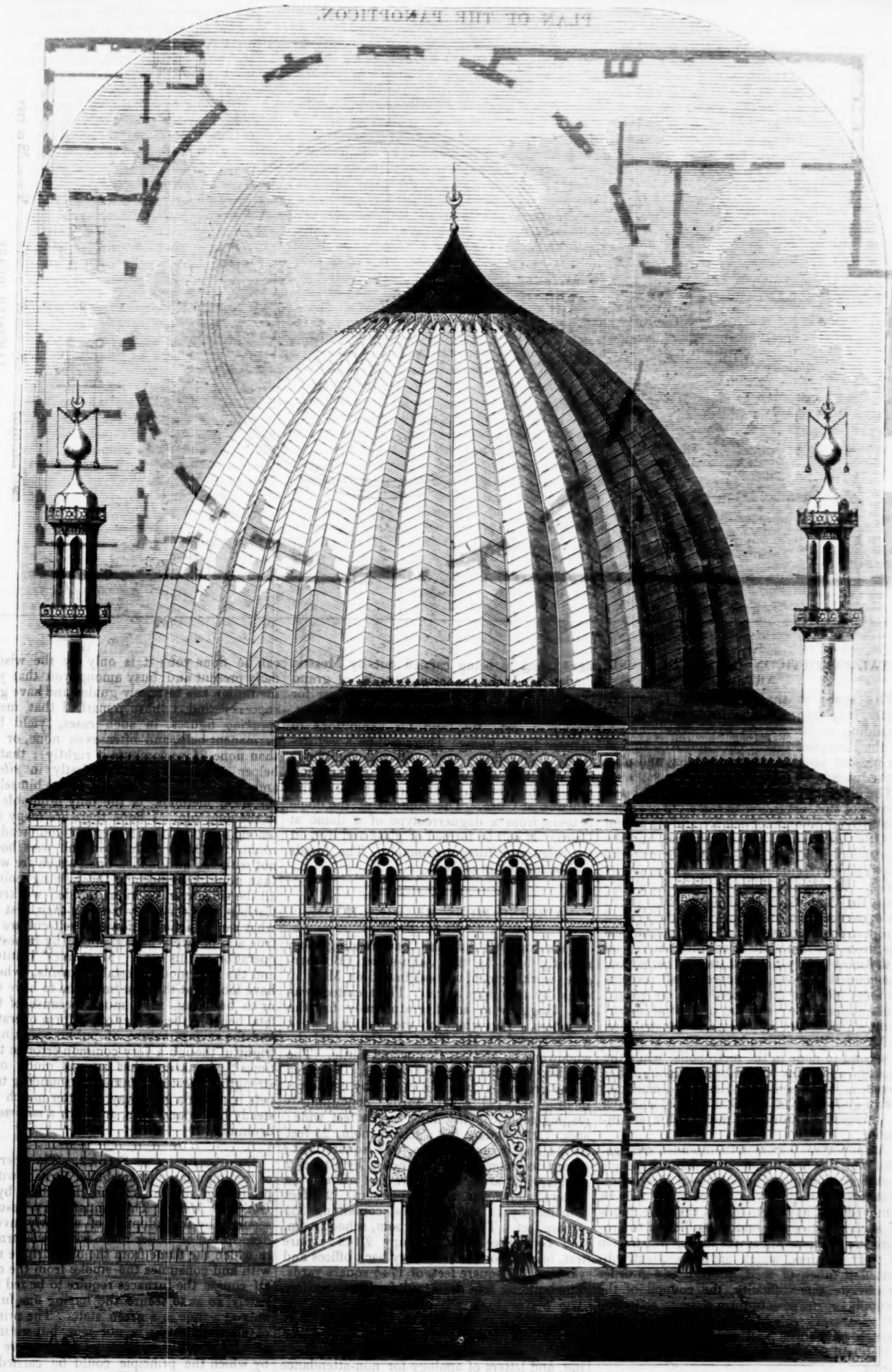
It is proposed to have two daily exhibitions, one in the morning devoted more especially to scientific information and research, while the evening entertainments will partake of a lighter and more amusing character.

The plan of the building, which was designed and is being carried out by Messrs. Finden and Lewis, comprehends a grand central hall, 97 feet diameter, domed over for the exhibition of machinery, manufactures, works of art, &c., and for exhibitions of various descriptions. There will be a lecture-room, laboratory, &c. All the buildings are designed in the Saracenic style, after models and details, chiefly from the existing remains at Cairo. The contour of the dome is taken from a daguerreotype of a dome at Cairo. It will be formed of glass and iron on the ridge and furrow principle. The façade will be formed in cement.

WORKING MENS' READING-ROOM, CARLISLE.

The opening of the new reading-room recently built by the John-street (Botchergate) working men, was celebrated on Monday week by a public *soirée*. The architect was Mr. Hogg, who acted gratuitously for the members. The whole of the building work was executed by Mr. Thos. Lattimer, and the woodwork by Messrs. Coates and Little. The building is in the Elizabethan style. The area of the ground is 70 feet 6 inches by 52 feet 8 inches, or 412¾ square yards, containing—reading-room, 53 feet long by 24 feet wide; area, 1,272 square feet; school-room, 25 feet by 24 feet 6 inches, area, 612 square feet; committee-room, 24 feet 6 inches by 10 feet 2 inches wide, area 259 square feet; library (a gallery above the committee-room), 24 feet 6 inches by 14 feet 6 inches, containing 355 square feet. The reading-room, school-room, and committee-room, occupy 2,143 square feet, leaving for the necessary back offices and yards 1,570 square feet, or 174½ square yards. The building was decorated for the occasion. The mayor took the chair, and about 500 persons were present. The Dean of Carlisle, Mr. W. N. Hodgson, M.P., the mayor, and various other gentlemen addressed the meeting, and letters of apology for non-attendance by Lord Carlisle, Lord Brougham, Sir James Graham, Mr. Thomas Carlyle, and Mr. Dickens, were read. Mr. Carlyle's epistle was a characteristic one. "It is not," he remarks, "by speaking visitors and transient strangers, however wise and well-disposed, that any benefit can be done you: it is only by the wisdom daily present and busy among you that your institution can be wisely guided and have good success; and I have remarked that merely *speaking* figures, in such cases, yield little permanent help, and often even none, or less than none (if we compute it rightly); that the helper who will help steadfastly in *silence*, and, with continuous loyalty, exerts himself by the silent methods, is the only profitable one in the long run. I hope there are many such among you; and that by degrees your reading-room (furnished with *good* and wise books, not with *bad* and foolish ones, which are worse than none), may become the rallying point of all the sincere and serious-minded workers in Carlisle, that they may try with their best skill what can be achieved towards self-culture (the true aim of every human soul), by honest co-operation in this kind. Mechanics' Institutes, and the like modern establishments, when I have looked at them, seem to me to have died, or to be dying, very much because of their fatal belief in the efficacy of platform operations and the saving nature of public speaking; a frightful though a very common error in these times! An army that spends much of its strength in beating drums and sounding trumpets is not in a good way. Better march with steady hearts and pace, and with a *minimum* of drumming!"

Consumption of Smoke.—The operation of feeding a large steam-boiler furnace without producing smoke is thus described by the *Glasgow Mail*. This satisfactory result is secured by the adoption of a newly-invented description of boiler made with two furnaces, in which the flame from the one furnace meets with and consumes the smoke from the other. Of course the furnaces require to be fed alternately, so as to secure the having one furnace only at a time in a green state. The principle of alternate firing is not new, but we understand that until very lately no boilers were made by which the principle could be carried into practical operation. The one we saw has been made by Mr. Gray, of Washington-street, for the Messrs. M'Farlane, distillers, Port Dundas. A well-sustained effort for the general adoption of such means will go far to remove from us the plague of smoke.



THE ROYAL PANOPTICON OF SCIENCE AND ART.

MESSRS. FINDEN AND LEWIS, ARCHITECTS.

THE INCORPORATED SOCIETY OF ARCHITECTS.

The position which the profession holds in public estimation is of serious importance to both parties, as it involves the question of pursuit, and its advancement. The incorporation of the profession has at times been suggested as the most effectual means of securing the honourable position of architects, and though there has strongly arisen from such a step, I am now disposed to think that we should form a society or set of

THE INCORPORATION OF ARCHITECTS.

THE position which the profession holds in public estimation is of serious importance to both parties, as it involves the vitality of the pursuit, and its advancement. The incorporation of the profession has at times been suggested as the most effectual means of amending the anomalous position of architects; and though at one time strongly averse from such a step, I am now disposed to think that it should form a primary object of attainment. There can be little doubt that all incorporations constitute monopolies, less or more exclusive; and it is, therefore, incumbent upon those who advocate their formation that they should show good cause for such a proceeding. But, first, let me correct an impression which, though very general, has, I think, been very hastily adopted,—namely, that monopolies *per se* are contrary to the spirit of the age: so far from this being the case, I do not think that history can adduce any period of equal duration, within which so many monopolies have been constituted, as within the last five-and-twenty years. Monopolies which subserve the advantage of a few at the expense of large portions of the community are justly considered hurtful, and are removed; but those which promote the advantage of the community as well as that of the individuals incorporated, are greatly encouraged. Now, believing as I do, that incorporation *upon a liberal basis* would be highly advantageous both to the public and to the profession, but especially to the former, I am desirous of urging the necessity of its adoption upon the attention of your readers.

In the following outline I have endeavoured to meet all the reasonable suggestions which I have heard from time to time; but of course I do not conceive that all the details are completely worked out, even as far as sketched: they are in fact introduced more for the purpose of giving distinctness to the general features, than for adoption.

I propose that the college should consist of four grades or classes, viz.:—

1st. Graduates, or students, being those who are articled clerks in the office of a practising architect, and who should be required to pass through a certain course of examination at the termination of their apprenticeship, in order that they may yield evidence of the kind of instruction which has been given to them, and of the use they have made of the opportunities afforded them. The period of apprenticeship might be varied in duration, according as the graduate has spent any time either at college or in the workshop; but at least one year of his articles should be occupied as assistant to a clerk of works, for the attainment of that practical knowledge and experience which no *office* can give. The examination might comprise the mathematics, with especial reference to geometrical form, the equilibrium of arches, hydraulics, and land surveying. The details of construction, including the more abstruse portions of carpentry and stonework, with the strength of materials, building, surveying, and measuring; the getting out of detail drawings in the presence of the examiners, with the history of architecture and its various styles, with their most remarkable characteristics, illustrated by sketches made, on the spur of the moment, from memory.

Having passed through an examination of this kind the graduate would then be admitted into the

2nd class, or the Associates. These would be eligible to be assistants to practising architects either in the office or as clerks of works, or to take private business, under the supervision of a member of the third or fourth class as a consulting architect. The Associates should be required to practise as such for years, and to pass through a less elementary, but more searching practical examination previous to admission into the

3rd class, or the Licentiates, who should be practising architects, with privileges nearly as full as those of the next or highest class; and after years' practice as a Licentiate, they should be advanced into the

4th class, or the Fellows. Every promotion would, of course, be dependent upon the aspirant having passed through his probation without any imputation upon his professional integrity and competence.

The government of the college, or guild, I propose to vest in a senate elected from the class of Fellows only by the votes of the three superior grades: one senate being elected by the profession throughout Great Britain and Ireland: to be metropolitan, and to have the complete supervision of professional practice in all its details, and provincial senates for London and each district, who should make *ad interim* arrangements, to have force in the intervals of the sitting of the metropolitan senate, and to be affirmed or negatived by that body at its annual meeting: the provincial senates to meet monthly or quarterly, as may be deemed most advisable, and at the most central point of the district; the metropolitan senate to meet annually; to be peripatetic; and no three consecutive meetings to be held within fifty miles of each other.

The Fellows I should emancipate from the fetters of the several Building Acts: they should be at liberty to adopt any form of construction, and any material they might think fit; but they should also be responsible for any accident, thence resulting, which should occur within years of the erection. But should the surveyors under the Building Act see fit, they may require a special meeting of the provincial or metropolitan senate, to be convened; and if the proposed construction is approved by that body, it may be adopted. The Licentiates should be excluded from this great privilege; unless the proposed deviation from prescription be approved of the senate (provincial or metropolitan), when they may be licensed by that body to make use of it. Of course records of the proceedings of the several senates must be preserved, published annually, and a copy deposited in the library of each provincial senate, for the instruction of the profession generally.

The monthly meetings of the provincial senate might be succeeded by meetings of the provincial guild, at which papers on professional subjects should be read and discussed, as at the meetings of the Institute, and of different local societies. The metropolitan senate, by changing its place of meeting in each succeeding year, would bring the heads of the profession into immediate contact with its more outlying members; and the occasion of its meetings might be adopted for the purpose of investigating ancient and modern edifices within an accessible range of the place of meeting.

With a profession thus constituted the public would have some guarantee for the ability and experience of the architect, in all save the artistic department of his practice; and this no system can secure them, until the mode is patented for making poets, &c. to order; but the public will not be in this respect in any worse position than they are now, whilst for scientific and commercial purposes they would be much benefited.

Within the profession the effect of the system would, I think, be highly beneficial: young men would give more attention to the business transacted before them: they would be more on the alert to learn, and improve their opportunities; and knowing that of necessity a certain period must elapse before they can be admitted to practise, they would not be so impatient to engage in competitions, or to open an office, as they are now. On the other hand the principals would feel that, to some extent, their credit was involved in the creditable examination of their pupils, and would, therefore, give them rather more attention than is included in "the run of the office," and would more faithfully discharge their duties towards their adopted neophytes.

There is one class who may appear to be excluded from the foregoing arrangements; namely, those who are never articled, but who, after working at the bench or as stonemasons, become clerks of works, and eventually architects. I should be very sorry to offer any insurmountable obstacle to the advancement of such as these, *after they are qualified*, and I think their case can be met by some modification of the second, or associat class.

I think also that a class might be advantageously constituted to comprise those builders and contractors of high character and ability whom it is desirable to distinguish from the inferior members of the trade; and thus impose a check upon jury-builders, and "scamp" work; but I feel that I have now trespassed at great length upon your space, and must defer any further observations to some future opportunity. J. B.

ROYAL INSTITUTE OF ARCHITECTS IN IRELAND.

THE annual general meeting was held on the 26th November, Mr. G. W. Papworth in the chair. A resolution was passed deploring the loss of one of the late vice-presidents, Mr. W. Farrell.

The following officers were elected for the session 1851-52: — President—Marquess of Clanricarde. Vice-Presidents—Sir T. Deane, Messrs. Owen and Wilkinson. Secretaries—Messrs. P. Neville and James Owen. Treasurer — Mr. William Murray. Auditors — Messrs. Nathaniel Montgomery and Alexander Tate. Council—Messrs. J. Welland, P. Byrne, G. Papworth, F. V. Clarendon, A. Denny, J. Paine, and C. Lanyon.

HOUSE AGENTS' CHARGES.

TROLLOPE AND OTHERS *v.* HOSKING: IN WESTMINSTER COUNTY COURT.

THE plaintiffs in this case are the well-known house agents in Parliament-street, and they have a branch office in Grosvenor-street, Eaton-square. They sued the defendant for 10*l.* 10s. for commission, for letting a house in Eccleston-square.

Mr. Pollock, counsel for plaintiffs, stated, that he believed there was not much dispute between the parties on the facts of the case, but that the defendant had made a mistake as to his liability. The plaintiffs were house agents, and the defendant was owner of No. 66, Eccleston-square, and wanted to let the house. Messrs. Trollope, who were concerned for Mr. Cubitt and others in letting houses in that neighbourhood, had a general commission from Mr. Cubitt for letting his houses. They (plaintiffs) at first thought the house was Mr. Cubitt's, but afterwards found it belonged to the defendant; but Mr. Dangar, the builder, had authority from that gentleman to let the house, and employed the plaintiffs to find a tenant. The defendant was liable for the employment by his agent, and, in fact, had written a letter in February, 1851, which amounted to an admission of his liability; for although he denied being liable to commission, he authorised Mr. Dangar to pay what was right. The plaintiffs gave a card to view the house to a lady named Balfour, whose husband ultimately took the house, and although, after the introduction of Mr. Balfour by the plaintiffs, Mr. Hosking, or his agent, Mr. Dangar settled the terms; yet the plaintiffs were not to lose their commission, although the house was let behind their backs. As to the commission, he would call as witnesses some of the most respectable house agents in London, who would prove that the general custom of house agents was to charge 5 per cent. commission on one year's rent in every case where they had been the means in any way of introducing parties who afterwards took a house, although they might not have any trouble about negotiating the terms. It had been laid down by Best, Chief Justice, that "if there were a general custom, the employment was to be considered according to the custom." He cited the cases of 1 Carrington and Payne, 892; Rainy *v.* Vernon, 9 Car. & Payne, 559; Robins *v.* Burke, Law Times, 1845; in all which cases the plaintiffs, who were house or land agents, had recovered full commission, although the property had been let by private contract, or sold before the time advertised for sale. He therefore had no doubt his Honour would give judgment for the plaintiffs for the amount they claimed.

Several witnesses were called on the part of plaintiffs; amongst others, Mr. John White, the manager of Messrs. Trollope's office in Grosvenor-street, who stated that they had a general commission from Mr. Cubitt to let his houses. He remembered that in February 1849, Mr. Balfour was looking out for a house. He gave a card for viewing the house in question, thinking it was one of Mr. Cubitt's. He went to the house, and was referred to Mr. Dangar, and, in consequence, Mr. Dangar called on the following day, and said that he had built the house, and had sold it to Mr. Hosking, and if let, he would pay the usual commission if they found a tenant. Witness had one or two communications with Mr.

Balfour. When he found the house was let, he sent in the account, charging the usual commission to which Messrs. Trollope were entitled as having introduced Mr. Balfour; and he produced a card, showing the terms of letting. On cross-examination, White admitted that his first knowledge that the house was to be let was seeing the house built; but he considered it one of Mr. Cubitt's. The house had never been put on Messrs. Trollope's books, and he would not have taken any steps unless Mr. Dangar had called upon him and authorized him to let it the day after he had been to Mr. Cubitt's. He said that the statement he had made in his letter to Mr. Hosking (which defendant's attorney showed to him), "that he did not know that Mr. Hosking was the owner until after the house was let to Mr. Balfour," was written in a hurry, under a mistake; but that he had known that he was the owner before Mr. Balfour took the house.

Mr. Dangar stated that his firm had built the house and sold it to Mr. Hosking; that in consequence of Mr. White, Messrs. Trollope's manager, having made inquiries about the house, he called at their office; but this was subsequently to Mr. Balfour having been about the house. When he saw Mr. White he told him that as he had sold the house, he was anxious to find a tenant soon. When he wrote the letter about Mr. Hosking paying commission, he had no authority from Mr. Hosking, but if, as stated in the letter, Messrs. Trollope were the first to refer a party, he thought Mr. Hosking would pay commission; but witness did not go to Messrs. Trollope's until Mr. Balfour had been to him several times about the house.

Mr. Jervis (of Rushworth and Jervis's), Mr. Jay (of Snell and Co.'s), and other house agents, stated the invariable custom of the trade to be to charge commission in cases where cards to view, or any information whatever was given, which led to a party taking a house or making a purchase, although they were not called upon to do any thing further in the matter. To questions by defendant's attorney, they agreed, that if more than one agent were employed, it was the one who gave the first information who alone was entitled to the commission. Mr. Jay, however, stated an instance in which a gentleman had employed three agents, and had to pay them all; but he considered this was wrong. No charge was made for merely putting descriptions on the books.

Mr. Balfour was called, and stated very distinctly that his first communication about the house had been with Mr. Cubitt's people, and entirely through their recommendation was induced to follow up the treaty. He was referred to Mr. Dangar; and he had settled the whole with Mr. Dangar, who acted for Mr. Hosking, and he had not seen or known Messrs. Trollope throughout the matter. He understood that his cook had got a card from Messrs. Trollope; but he believed it was after he had seen Mr. Dangar. Mr. Balfour's cook was called, and stated that she had got a card to view the house from Messrs. Trollope for her mistress; but stated it was on the last day of February. This was the plaintiffs' case.

Mr. W. L. Donaldson (solicitor) said he appeared for Professor Hosking, who was a gentleman of high character, and would not have resisted this claim if he had considered that Messrs. Trollope had the slightest ground for making it; but he resisted it because, as the evidence showed, Messrs. Trollope had never been employed by him or by Mr. Dangar as his agent; nor had they been the means of procuring Mr. Balfour as a tenant. Mr. Hosking had purchased the house of Messrs. Avery and Dangar as an investment, and he simultaneously purchased the ground-rent of Mr. Cubitt. Mr. Dangar, on selling the house, had engaged to use his best endeavours to find a tenant, and without any charge or expense to Mr. Hosking. Notices were put up on the house referring to Messrs. Avery and Dangar's office, and also to Mr. Cubitt's office in Lyall-street, by permission of Mr. Cubitt, at Mr. Hosking's request. Almost every one who wanted a house in that neighbourhood went to Mr. Cubitt's office in the first instance, and this Mr. Balfour did, and saw the house described there, and was referred to Mr. Dangar, with whom he subsequently arranged all the terms, without seeing or knowing anything of Messrs. Trollope in the transaction. Although Messrs. Trollope might have given the card to Mr. Balfour's cook, it was after Mr. Balfour got the information; for the cook stated she got the card on the 28th of February, the last day of the month, and Mr. Balfour stated that it was towards the end of February he had begun the treaty—it was, in fact, two or three days after Mr. Balfour had seen Mr. Dangar. Messrs. Trollope, therefore, did not give the first information. Besides, they were never employed by defendant or by Mr. Dangar as his agent. It was not because a house agent went and looked about to see what houses were to be let, that the owner was to be liable to pay commission, even if the agent introduced a party who took the house. The owner might determine not to employ a house agent, being unwilling to expose himself to any such claim as the present; and was he to be forced to pay commission by the unauthorised interference of any house agent? The letter written by the defendant was relied upon as an admission of his liability; but what did it amount to? He distinctly denied his liability to commission, an account for which had been sent, to his great surprise, after the lapse of a year after the house was let. Mr. Hosking said,—"I am not in any way liable; but if you have put the house on your register, and have had trouble on my account, Mr. Dangar may pay you a guinea or two, if he thinks it right, and I will repay him." There was no pretence for the claim, and the transaction was as Mr. White stated in his letter (but which he now says was written in mistake) that Messrs. Trollope knew nothing of Mr. Hosking until after the house was let, and then wrote to Mr. Balfour to know the terms, in order to make up a charge against Mr. Hosking.

As to the 5 per cent. commission, all the cases quoted by the learned counsel show that there had been some original contract between the parties; but in this case there was no agreement or contract at all, and therefore the cases do not apply. All the agents called by the plaintiffs admit that there was no claim for putting a house on the books, but even this was not done; for White admits this house had never been put on the plaintiffs' books. The defendant, under these circumstances, resisted the claim. If defendant had incurred any liability, he (defendant's attorney) believed Mr. Hosking would not have raised any question as to the amount of commission, whatever objection he (defendant's attorney) might have raised upon that point; but the evidence clearly showed that Messrs. Trollope had never been employed. They interfered without any authority, and then only after Mr. Balfour had got information of the house at Mr. Cubitt's office, and had begun his negotiation with Mr. Dangar. Mr. Donaldson doubted not the judgment of the Court would be for his client.

The judge said, "judgment must be for defendant: he had derived no benefit from plaintiffs' services. The defendant never employed the plaintiffs."

SURVEYORS' CHARGES.

Frasi v. Pocock, in the Exchequer. This was an action to recover 15*l.* for work and labour done.

It appeared that the plaintiff was a surveyor, and that the defendant was the proprietor, in 1847, of some extensive brick fields near the Caledonian-road, Islington, which were about that time required by the Great Northern Railway Company. The defendant demanded a high price for his land, on account of its value for brick making. The sum he asked was 43,000*l.*, and his claim was referred to an arbitrator, who awarded him between 23,000*l.* and 24,000*l.* Whilst this business was pending the defendant employed the plaintiff to make an estimate of the value of his land, which he did. For this work the plaintiff charged a per centage on the amount of the award, which, together with other expenses, amounted to 15*l.* The defendant refused to pay this sum of money, but paid 4*l.* 19*s.* into court, as a sufficient compensation, and pleaded never indebted as to the rest.

The defendant denied ever having employed the plaintiff to survey the land, but had merely asked him to state his opinion before the arbitrator of the probable value of the land with regard to ground-rents.

The defendant, in his evidence, said he had received 17,000*l.* from the company for five acres and a half of freehold land, and 4,980*l.* for brick earth. About 100 sites, or frontages were planned out, and other sites were not touched by the railway. He had paid Mr. Barnard, his own surveyor, 100*l.* for the valuation he had made, but the plaintiff had only been authorised to ascertain the value of the ground-rents of the houses which might have been erected on the land required by the company. Proceedings had been taken by three other persons for valuations of other portions of the property, and they had all recovered verdicts for sums of 90*l.* or 100*l.*

The jury, after a short address from his lordship, returned a verdict for the plaintiff—Damages, 110*l.*

Opening the Area of St. Paul's.—The dean and chapter have somewhat bluntly refused to hear any further conference on this subject till measures are taken by the City to enlarge the approaches.

LIGHTHOUSE FOR THE GODWIN SANDS.

I have read with much attention the observations of Mr. Gearing and Mr. Hoblyn on the laudable endeavour to establish a light-house on the Godwin Sands. I have myself, on a former occasion, given much attention to the subject, on a different principle to that of either Mr. Gearing or Mr. Hoblyn; but the great and insurmountable difficulties were such as to induce me to abandon it, from the practical observations of those in connection with the Godwin Sands, and from their own practical experience, considering such an undertaking hopeless or almost useless, for the following reasons:—The Godwin Sands extend for a distance of nearly 14 or 15 miles and about one in breadth on an average, and their depth has never yet been ascertained either by the Trinity House or others,—and the late Dr. Potts, I believe, went lower with his beautiful and simple operations of hollow piles than any other person. From the great extent of the sands, and the necessity of giving vessels all the warning and precaution possible, the Trinity House have moored vessels with floating lights at various distances round the sands, and the only practical model appears to be by four permanent lights could be established at N., S., E., and W.; so that vessels should always keep outside of the lights. Then if Mr. Gearing's idea could be carried out, of a suspension bridge across one of the narrowest parts, it might serve as a place of refuge if a boat could make its way to the lights.

The subject is well worthy consideration, in order to save life and vessels.

A Subscriber.

GAS AND WATER SUPPLY.

Newport (Isle of Wight).—The new gas company have begun to lay their pipes. The water company, who have a clause in their Act preventing the laying of any gas-pipe within four feet of a water-pipe, had just advertised for tenders for water-pipes to be laid on the same spot, viz., a narrow lane called Deadman's-lane. The new gas company have therefore stolen a march on the water company.

Sheffield.—A public meeting, says a local paper, convened by the mayor, has been held, at which Mr. Laidlaw, of Glasgow, gas engineer, attended, and presented an estimate of the cost at which gas might be produced, which showed that, after allowing for all contingences, the gas could be sold at 3*s.* per 1,000 feet, and, if there were 100 millions sold, would give the shareholders a dividend of at least 7½ per cent. Another speaker, Mr. Flintoff, of London, stated that estimates laid before Parliament in 1847 showed that for a consumption of 28 millions the price ought not to be more than 3*s.* 2*d.*, paying 10 per cent. A party employed by the committee to test the figures formerly brought forward informed them that gas could be made under 2*s.* 6*d.* per 1,000, and, considering losses and other contingences, they were justified in offering it at 3*s.*, with a strong probability that in a few months the price might be further reduced to 2*s.* 6*d.* per 1,000. The meeting, which was very numerous, passed a resolution, with only one dissentient, expressing its satisfaction with Mr. Laidlaw's report, and pledging itself to support the new company.—It is also stated in a local paper that at an ordinary meeting of the chemical society, Dr. Frankland, the chemical professor at Owen's College, Manchester, communicated to the society the result of his investigations of the process recently patented by Mr. White, for the manufacture of gas from water and carbonaceous matter at a high temperature. It had been maintained that the hydrogen of the water combined with the carbonaceous matter, producing gases of highly illuminating properties. This supposition Dr. Frankland showed to be erroneous, but at the same time pointed out some advantages of the process. His experiments were conducted upon resin. The illuminating gases which this as well as coal produce, are known to suffer rapid decomposition by the heat of the retorts in which they

are formed before it is possible for them to escape. The great loss thus occasioned has induced some gas manufacturers to employ large exhausters, to draw the gas rapidly from the retorts. But by the use of water gas, as specified in White's process, not only is this end attained much more effectively, but a large quantity of valuable material upon which the illuminating power depends, which would otherwise remain in the tar, is taken up and converted into valuable gas, besides other minor advantages. One of the difficulties in the generation of water gas is to obtain it free from carbonic acid. Dr. Frankland has not been able to prevent its formation entirely, and therefore proposes, as an efficient means of removing it, a solution of caustic soda, through which the gas is made to pass before entering the holder. Neither wet nor dry lime are suitable for the separation of this substance from the gas. The cost of this mode of purification does not exceed ¾d. per 1,000 cubic feet. The illuminating power of the hydrocarbon gas thus made, it is added, was found to be superior to that of Manchester coal gas in the relation of 100 to 88·9, or that 1,000 cubic feet of hydrocarbon gas was equal to 1,125 of Manchester coal gas. Another advantage consisted in the fact that unpurified hydrocarbon gas does not contain any ingredients which prevent its use, as in the case of the gas from coal. Dr. Frankland also stated that he had extended his experiments to the application of this process to coal, the very interesting results of which he would communicate to the society on a subsequent occasion.

South Shields.—It is proposed to extend the Sunderland water-work pipes to South Shields, a distance of seven miles, by Cleadon, Harton, and Westoe. The supply, according to the plans, would be constant, and at a pressure sufficient to raise it to the tops of the houses in Shields.

Dunshalt.—The *Fife Herald* states that a gas-work, to cost between 600*l.* and 700*l.*, is nearly completed in this little village. The inhabitants are principally hand-loom weavers, who had long sighed for a substitution of "the new light" for the old "weaver's lamp," and at length formed a committee, who canvassed the village and vicinity, and succeeded in collecting the necessary shares, in which they were materially aided by a neighbouring proprietor, Mr. O. Tyndal Bruce, of Falkland House, who will no doubt benefit by the improvement as well as his humbler neighbours, who have not only the merit of establishing a gas-work but also "a spacious and handsome hall, in which they assemble for improvement," and which was erected some years since. Such efforts merit note as an example of laudable ambition, and may show to thousands of villages throughout the country what can be done with industry and resolution.

St. Neots (*Hants*).—Mr. Bower, of St. Neots, says the *Manchester Courier*, "has constructed a patented apparatus for making gas from coal, so small as to be adapted for private houses, inns, and other places where ten or fewer lights may be required. It is inclosed in an iron frame, occupying but little space, and may be managed by the errand-boy. Beautiful gas is said to be made by this plan, at the paper manufactories of Messrs. Towgood, Cambridge, at a cost of 1s. 6d. per 1,000 cubic feet. The patent consists in getting hydrogen gas from steam (generated by the same fire that heats the retort), and in converting that vapour into gas, which otherwise would be converted into tar."

Leighton Buzzard.—Some weeks ago a meeting of the inhabitants was held in the Town-hall, for the purpose of considering what steps should be taken to secure a reduction in the price of gas. All the consumers (with the exception of two, who are shareholders) pay 10s. per 1,000 cubic feet. Several resolutions, says the *Bedford Times*, "were passed unanimously, the last being in effect, that application be made to Mr. Brothers, the contractor, to ascertain if he would consent to reduce the price of gas, suitable to the present time, and agreeably to the cost in other towns. It was very sensibly pointed out that if a reasonable reduction were made, many inhabitants, who at present burn candles or oil, would be induced to patronise the gas company, and thereby a more liberal return for the capital invested would be effected." The contractor did not condescend to notice the application till urged to do so, when a formal acknowledgment merely of receipt of the communications was sent. Further steps are in contemplation. Dunstable is supplied by the same contractor, and much dissatisfaction also prevails in that town. Offers have been made by other companies, and new arrangements are likely to be gone into.

Ryde.—A report has been made on a projected water supply for the town of Ryde. It is intended by it that the water should be obtained from Alverston, on the south of Ashydown. The length of the river at Niton to Alverston is about eight miles: the valley through which it flows is purely agricultural. The supply is available without any engineering difficulties: it is only necessary to raise the water to the top of the down. The report concluded by urging the necessity of the Health of Towns Act.

Books.

The British Almanac and Companion, 1852. London: Charles Knight.

THIS excellent work maintains its reputation and will be found useful by all, we might almost say indispensable. The "Companion" contains articles on the Invention of Fluxions, the Great Exhibition, the Census, County Courts, Railways, Public Debts, Public and Architectural Improvements, and abstracts of Important Public Acts passed during the year.

The section "Public Improvements" occupies 24 pages, and has eight illustrations. It is but weakly written. We give the writer's notions regarding modern churches, as a bettermost specimen:—

"Though there be plenty of Gothic precedent, in every period of the style, for making side aisles as high as the centre, as in Austin Friars' and the Temple, London, and still older churches in Germany, you will find our imitators, when there are to be side galleries, always choosing some model with low sides (cut lower to suit modern parsimony), and cramming the *two* flats of worshippers into about half the height and breathing-room allowed to the *single* floor of them in the centre; and this even though the additional height of the latter be an utterly useless affectation, the "clear story" (or *lantern* story) admitting no light. And though this generally brings the heads of the people in the galleries behind the spandril walls of the arches (which it never seems to occur to them to lighten by a single perforation)—though in such cases we have ample precedent, even in the high "lancet" style, for the use of low depressed arches (as in the Salisbury triforium galleries) to bring their springing above the heads of the occupants; our moderns invariably choose arches of the highest proportion. But the climax is perhaps seen in the present way of supporting such galleries. Though common sense would seem to suggest that the same pillars which bear the gallery could be continued up to bear the roof, as at William the Conqueror's chapel in the Tower, and every succeeding church with galleries and not roofed with one span, down to 1840; and though there is ample "precedent" for every possible distance of the pillars from the walls, from 2 to 20 feet, our moderns now always put them a little further out than the gallery is to project; and (though they be, as we have said, more massive and far less loaded than in old churches) support the gallery (which, perhaps by way of contrast to the Gothic lightness and elegance, they now assimilate as near as they can in style, to the tubular bridge) on a distinct row of pillars, or rather posts, a foot or two behind the others.

For what purpose were these structures built? We believe the question would sorely puzzle any society of antiquaries that should alight on them with no historical clue. Is there evidence in them of any other object than to look pretty and mediæval?

We have not gone into their looks. If we had, we should find it as difficult to discover wherein they follow the precedents of mediæval æsthetics as of mediæval common sense. In mediæval times, as well as all others, there was an instinctive sense of the propriety of making temples (if not larger altogether) bolder in *scale*, or size of parts, than the neighbouring secular buildings; but in our towns, where the latter have been constantly growing and the former dwindling in total magnitude till their relations have been just reversed, we seem to aim at making the contrast more glaring by repeating needlessly in the scale of parts what is unavoidable in the whole. Our designers have hard work indeed to make the shell that holds but one church, appear a cluster of fragments, and members diminutive as those of cottage work, but they succeed perfectly. In details, too, the mediæval church builders plainly aimed at as much boldness as their small mechanical appliances would permit, only turning an arch in several orders of stones, or a pillar in several shafts, because they could not make them in fewer. But we who use great blocks, cut each to give the appearance of several narrow arch-rings or several little shafts; and by diminishing all details in proportion to the lessening of general scale, seem to aim, among our swollen town architecture, at distinguishing the temple by a character of village or rather toy-like diminutiveness."

The "En Commandite," "Anonyme," and "En Nom Collectif" Partnerships. Extracted from the French Code of Commerce (articles 18 to 64), and translated into English; together with an Appendix illustrating the liabilities of Partners under the French and English Systems. By FREDERICK M. HAMBER. Effingham Wilson, Royal Exchange, London. 1852.

SINCE we first drew the attention of our readers to this important subject, the creation of several important companies in London under the French law of partnerships, it appears, and recent discussions in the Court of Bankruptcy on the subject, have occasioned an almost universal inquiry in the mercantile world as to what the system really is; and as few comparatively know anything about it, Mr. Hamber, feeling, to a degree, convinced of the practicability and probability of the introduction, into our system, of the partnership laws of our continental neighbours, has thought it worth while here to submit to the public a copy of such part of the original French code of commerce as relates to the subject, together with such explanatory notes as suggested themselves. The whole extract is lucid and simple, and comes within the compass of a very few pages. An appendix treats of the consequences of limited partnerships under our present laws, and points out what is necessary to their full and safe establishment.

The Family Almanack and Educational Register for the Year of our Lord 1852. To be published annually. Parker, Strand.

THE information given in this almanac is very varied. Besides the usual contents of an almanac, it contains a valuable register of educational establishments in England, Scotland, and Ireland, which the publishers are anxious even to extend, and accordingly invite particulars, although the register already occupies upwards of two hundred pages. There is also a list of the universities, with various details; and of the colleges connected with the Church of England, the various Dissenters, and the Roman Catholics. The educational register contains an account of the scholarships and exhibitions attached to schools, &c., and at the end is a list of national educational establishments in the United States of America.

MUSEUM OF PRACTICAL GEOLOGY.

GOVERNMENT SCHOOL OF MINES AND OF SCIENCE APPLIED TO THE ARTS.

Inaugural Discourse at the opening of the School, 6th November, 1851. By Sir H. DE LA BECHE, C.B., F.R.S.

On the National Importance of studying Abstract Science, with a View to the healthy Progress of Industry (being an introductory Lecture to the Course of Chemistry, Session 1851—1852). By LYON PLAYFAIR, C.B., F.R.S.

The Relations of Natural History to Geology and the Arts (a Lecture introductory to the Course to be delivered during the Session 1851—1852). By EDWARD FORBES, F.R.S.

On the Importance of cultivating Habits of Observation (being the introductory Lecture to the Course on Mechanical Science, Session 1851—1852). By ROBERT HUNT, Keeper of Mining Records.

THESE brief but excellent discourses,—some of which we have already quoted,—if they are

purchaseable, or otherwise to be had, by our readers, will be found to be well worth any trouble that may be taken in procuring them.

Miscellanea.

Electro-telegraphic Progress.—The Submarine Telegraph Company are getting made several new metallic cables, in addition to that already in operation—one conductor being already insufficient to convey the multitude of despatches now exchanged between London and the Continent. The facility and certainty with which the telegraph has worked have already effected a great revolution in commercial arrangements, which would be thrown into confusion by the rupture of the communication. Night and day it is carried on. There is still a space of about a mile (from East Cliff to the South Eastern Telegraph Office) unconnected by the wires. The distance has to be done by horse express, and, consequently, causes a few minutes' break in the communication. The desideratum is, however, to be speedily supplied. The number of telegraphic stations now open and in connection with the central station of the Electric Telegraph Company in Lothbury, amount to 226, embracing all the principal towns in the kingdom. Nearly seventy are principal commercial stations, at which the attendance is day and night: the length of the lines of communication extend over 2,500 miles, with 800 in progress of suspension. Since the partial reduction of charges, it is said, persons of all classes are availing themselves of its advantages for business purposes.

Masters and Workmen: Breach of Agreement.—On Friday week, a case came before the Hon. G. C. Norton, at the Lambeth Police Court, in which Mr. George England, of Old Kent-road, engineer, was pursuer, and Thomas Riding was charged by him with quitting his employment, while under a written agreement to act as his foreman, and re-engaging himself as foreman to Messrs. Langrage and Co., of Biddington, near Newcastle-on-Tyne, in whose service he was said to have made use of his experience in the construction of "The Little England" locomotive to the prejudice of the complainer. It appeared from the proceedings that Riding was under terms to work for Mr. England, at the rate of 7*s.* a day of ten hours, and that Messrs. Langrage gave him a salary of 200*l.* a year, besides a per centage on every engine he finished for them, and that his services were estimated as worth 500*l.* to the latter firm. For Riding it was stated that Mr. England had not given him 42*s.* a week, according to his agreement. This Mr. England denied, stating that his time some weeks averaged eight days, and, on the whole, must have averaged the sum contended for. His short time arose from want of light, as in winter. It was with great difficulty that Mr. England succeeded in giving this explanation, in the teeth of reiterated orders from the magistrate, and expostulations by the counsel for Riding, both of whom afterwards admitted that "the explanation was most necessary." It was shown that no use had been made of Mr. England's plans by Riding in his new employment. The magistrate was of opinion, however, that it was quite clear the defendant had violated the Act of Parliament; but, under all the circumstances, he thought he might mitigate the punishment, and therefore committed him to two months' hard labour instead of three.

Drawing in General Education.—The idea, early suggested in our pages, of making drawing as much an elementary branch of general education as writing, is fast spreading, and we have every prospect of seeing it ere long fully realised. At the annual meeting and *soirée* of the Gateshead Mechanics' Institution, which it appears was so fully attended that many ladies and gentlemen, including the committee themselves, were excluded from the tables from want of room, the president, Mr. Hutt, while stating in his address, reported by the local *Observer*, that the committee had established a school for drawing, as suggested by Mr. Scott, the master of the Newcastle School of Design, went on to remark that a knowledge of drawing, hitherto little regarded in all schemes of education in this country, is of great practical advantage to every one, whatever may be his situation or calling in life. Of course to every one engaged in constructive industry some proficiency in drawing is indispensable. The joiner, the builder, or the engineer who is unable to delineate on paper the objects he is required to make, will never pass for a conjuror at his trade. But it is a mistake to suppose that an acquaintance with drawing is of value only to artists and mechanics. It is valuable to every man in every position of life. It is valuable, not only for its own direct purposes, but for training the eye to observe with precision and accuracy the objects which it sees, and for enabling the memory to retain them. Perhaps no one ever observes external forms with entire correctness, unless he is able to draw them; and if any person not accustomed to the pencil should doubt the justice of this assertion, let him try to delineate from memory any object with which he is most familiar—a tree which he has gazed at from childhood—the house which he has lived in all his days—and he will soon discover that his real acquaintance with the details of these familiar objects is very limited and imperfect.

Incrustations in Boilers.—We find by an American paper that in Louisville, where the water is strongly impregnated with lime, coal tar is said to have been found to operate much better than any other agent yet experimented with in protecting boilers from corrosion by lime incrustations. The mode of application is as follows:—The boiler having been thoroughly cleaned, a pint of tar is poured inside, and, as the boiler is re-filled with water, the thin film of tar which floats on the surface attaches itself to the interior. Afterwards, a pint of tar per week to a boiler of about 28 feet in length, is poured amongst the water to maintain the coating at first produced. By these means, the lime deposit adheres to the tar instead of the iron, and can be removed, it is said, with comparatively little or no trouble. ——In coincidence with this plan, we observe that Mr. J. Ashworth, of Bristol, manager of the Great Western Cotton-works, has secured a patent for the employment of a certain compound of coal-tar, linseed-water, plumbago, or black-lead, and Castile, or other soap, for the same purpose. The following proportions are said to have been found to answer:—33 gallons of coal-tar, 21 gallons of linseed-water (prepared by boiling with the aid of steam, 14 lbs. of linseed in water, and then straining to remove the seeds and other impurities), 5 lbs. of plumbago or black-lead, and 8 lbs. of Castile soap (or soft-soap, but not with so much advantage). These ingredients form a creamy composition, of which, for a 30-horse power boiler, one gallon is introduced twice a week (the steam having been previously blown off). The impurities scale off and fall to the bottom of the boiler, whence they can be swept out, or otherwise removed.

Ipswich New Grammar School.—Since Prince Albert laid the first stone of this building (concerning the designs for which, the mode of selecting the architect, &c., our readers will remember an unpleasant correspondence in our pages) the works have proceeded steadily. The roof was on, and was, as we are informed, about one-third covered with tiles, when the western wall yielded, and the building has consequently been shored up pending the determination of remedial measures to be pursued. We have received some communications commenting in bitter terms on this result of an improperly-managed competition, and pointing out other defects, such for example, as placing the floor so low that it will at times be overflowed; but this seems so much like "hitting a man when he is down," that we do not insert them. It is an open timber roof, and the thrust appears to have been too much for the wall. The local *Journal* says,—"We much doubt whether the construction was such as it ought to have been, or in accordance with those ancient roofs which have survived some centuries; and we may also observe, that the western wall being perforated for large windows, had not that thickness which is required for such a roof. There were certainly buttresses to the wall, but these were not placed so as to sustain the thrust of the principal rafters. Most unaccountably the tiles were first laid upon the eastern slope, thereby causing a pressure upon the wall, which was not supported by the adjacent building. The consequence was, as we have mentioned, the western wall gave way, and we suppose will have to be taken down."

Architectural Institute of Scotland—Sanitary Improvement of Glasgow.—Thursday night, Dec. 11, the first sessional meeting of the Architectural Institute in Glasgow, was held in the Queen's Hotel—Sir James Campbell in the chair. Mr. Charles Wilson read a paper prepared by himself and the architects of the city, on the sanitary improvement of Glasgow. The subject was handled at great length, embracing the question in all its subdivisions, of width of streets, height of buildings, opening of thoroughfares, drainage, and supply of water. The whole was wound up with a scheme of sanitary improvement. The reading of the paper led to a discussion, in which Mr. W. G. Smith, Mr. Salmon, Mr. Finlay, Sir James Anderson, Mr. Carrick, Sir James Campbell, and the Lord Provost, took part.

Liverpool Architectural Society.—The fortnightly meeting of this society was held on Wednesday, 10th inst.—Mr. Picton in the chair. The chairman read a notice relating to the proposed architectural exhibition in London, to be held in the Portland Gallery, Regent-street. The chairman next alluded to the opening of the assize courts at St. George's-hall, on Monday, 8th inst., for the first time. He said the courts were not as large as they ought to be. The public accommodation was not consulted, for while the barristers had ample sitting room, there were no seats for strangers. The next defect was the bad hearing. The sound appeared to him to go behind the judge, instead of forward. Mr. Verelst suggested that a deputation of the members might investigate the causes of the deficiency of sound. Mr. Barry then read a paper upon the arrangement of workhouses, which embraced some remarks upon the present workhouse system. The subject for the next meeting was announced to be a paper by Mr. E. H. Strype, "On the influence of fine-art schools."

Monument to the late George Stephenson.—A meeting of the committee was held on Wednesday week at the Euston Hotel, Euston-square. Mr. Glyn took the chair. Mr. Geach, M.P., having been called upon to read the report, said the exertions of the sub-committee had been confined to the obtaining such subscriptions as could be raised in a quiet way, for they thought it was not necessary to raise a large sum of money, but rather to get subscriptions from a large number of persons. A general desire to contribute had been expressed by workmen, especially in the districts where the late Mr. Stephenson was well known. The result was that, with little publicity and very small solicitation, 178 subscribers had contributed 2,550*l.* 15*s.* 6*d.*, and 3,150 workmen had given 285*l.* 2*s.* 7*d.* The expenses amounted to 72*l.* 18*s.* 4*d.*, and the balance available was about 2,800*l.* That sum the committee believed to be quite sufficient; but if there should be any deficiency, the committee had authority for saying there would not be the least difficulty in making up the required sum. Mr. Ellis, M.P., then moved that the monument should be erected in London; and Mr. Geach subsequently moved that the directors of the London and North-Western Railway be requested to set apart a site at the entrance of the Euston-square station. A committee was then appointed, and the meeting separated.

Building for the American Exhibition.—The building designed for this purpose by Sir J. Paxton is about 600 feet long, and 140½ wide, in three aisles. The roofs are sloping and slated, and have timber principals, which would require careful construction. There are turrets at the angles, and piers with lamps surround the whole.

HUNGERFORD HALL.—The theatres constructed here are now in full operation, and offer attractions to all sight-seers. In one, M. Langlois is exhibiting some capital "Conjuring," a very clever Indian juggler, and various optical illusions; and in the other, M. Lassaigne as a magnetizer, and Miss Prudence are astonishing all who see them. Whether this last exhibition be regarded as the most extraordinary juggling that was ever effected, or the display of most mysterious natural phenomena, it should be seen by all who are curious in such matters.

MARYLEBONE LITERARY AND SCIENTIFIC INSTITUTION.—The new theatre, which we lately gave an account of, is in active use. The managers are going a-head with some spirit. On Thursday, 18th, a subscription concert was given, in which Misses Birch and Dolby, Mr. W. Harrison, and others appeared. We do think that whether the leading inhabitants of a neighbourhood delight in the literary, the scientific, or the more strictly amusing or entertaining branches of such institutions, or in all three combined, they ought to give their substantial support to them for the sake of the others to whom they are most useful.

CHESTER ARCHITECTURAL SOCIETY.—The monthly meeting of this society was held on the 1st. The Marquis of Westminster presided; and the Rev. G. B. Blomfield gave a topographical description of the original and present arrangements of the abbey buildings of St. Werburgh's, Chester. In reference to some remarks of the lecturer on the state of MSS. and abbey deeds, the Rev. Wm. Massie took occasion to bring before the meeting the general subject of the county, city, and ecclesiastical records. Those of the city were, as heaps of parchment, in heaps of dust, and the others at least needed a more minute classification, by some person well qualified to make a digest and descriptive catalogue of them for easy reference. Mr. Ayrton then drew the attention of the meeting to the objectionable character of new gas lamps now erecting on the city gates, and submitted a letter, which was adopted, and ordered to be signed by the secretary for transmission to the mayor, pointing out that the design of these lamps is out of character with the gates on which they are being placed.

ILES'S PATENT MARBLE.—The scarcity of the choicest kinds of marble and the expense of working, necessarily renders this material very limited in its application. As a partial remedy for this, numerous attempts have been made to supply the demand by artificial manufacture, and notwithstanding a growing feeling against "imitations," will doubtless continue to be so. The "patent marble" now before us, manufactured upon new principles, gives a successful imitation of many kinds of rare marbles, and is said to be durable and cheap.

NEW TABLE OF CAB FARES.—A correspondent, J. F., suggests the formation of cab fare tables founded on the principle of the square, or somewhat like the common multiplication table, with names of places instead of the multipliers, and amount of fare between the two in the place of the product. An immense number of fares could thus be condensed into a small space, and be made intelligible to every one who understood the ordinary multiplication table. Even this, however, unless as a previous check, might be superseded by the use of the track-dial, measuring the distance run over by the cab-wheel and pointing it out to every passenger. The only objection we can see to this latter, on the faith, of course, that it measures the ground with exactitude, is the power it might give the cabman to take roundabout routes, for the purpose of lengthening his course, or of clearing uncompleted miles. The table suggested by our correspondent might be a check in such a case, and, at all events, it would have the advantage, which the dial has not, of informing passengers beforehand what they will have to pay between any two given points. In cases of cross-running, however, from place to place in irregular transit here and there, the dial should decide.

MARGATE PIER COMPETITION.—As the surveyor to the directors of the Margate Pier and Harbour Company, I am in a position to give a distinct contradiction to a correspondent's remarks appearing in THE BUILDER of the 13th inst., relating to the competition for a new landing-place. The directors have no plan before them: when the question of a new landing-place was first raised, a plan was offered to them, which they declined to accept or consider, nor has it been brought before the directors in any way; and I am quite assured that their only object will be to select from the plans which may be submitted to them that which may seem best suited to their requirements, without reference to its author.—WM. CAVELER.

WESTMINSTER BRIDGE.—As you are taking some interest in the proposed new bridge at Westminster, let us hope you will exercise your influence in deterring the public mind from a cheap bridge, more especially from *the so-called cheap foundations* as are now being exemplified at Rochester and elsewhere, and such as were advocated before a committee of the House of Commons last session upon Westminster-bridge. The failures which have taken place in the foundations of the present Westminster and Blackfriars bridges ought to be a salutary lesson against *cheap foundations*. With the examples of Smeaton, Rennie, and Telford before us, and the noble bridges of Waterloo, Southwark, and London, which decorate the metropolis, it would be to our eternal dishonour if any but the most solid bridge were erected at Westminster.—* * —— It is to be hoped the architect will not forget to provide a railway on the new bridge to the central terminus in the City, as was proposed some little time since, as a branch to one of the railways on the other side of the river.—A BUILDER.

LITERARY AND SCIENTIFIC SOIREE AT NORTHAMPTON.—A grand *soirée* was held on Wednesday evening last, in the Corn Exchange, Northampton, to commemorate the opening of a new suite of buildings for the town and county Mechanics' Institute. There were nearly 800 persons present, including the principal resident nobility and gentry. Lord Fitzwilliam took the chair, and addressed the assembly, as did Mr. Layard, the traveller, in an interesting speech. Mr. Charles Knight, too, Mr. V. Smith, M.P., Mr. George Cruikshanks, Lord Henley, Dr. Conolly, and other gentlemen, addressed the meeting.

CONDITION OF FLEET MARKET.—I am old enough to remember when Fleet Market, in Farringdon-street, now, was one of the most frequented spots in London. But, alas! the spot is wonderfully changed. Putting the market on one side of the same street (on the shelf), and building a row of houses in front, has as completely crippled its use as though it had been sent out of town. You now enter a dreary cell-looking precinct, and if you enter it in Shoe-lane, your very limbs are in danger all the way through to Farringdon-street. It is a dank, dark, dismal hole, not even light enough for a criminal prison. Pray recommend them to put lights into the roof, and open the place to Farringdon-street WIDE. It ought, from its position, to be of as much use as Leadenhall or Newgate.—JOHNNY.

DONCASTER WATERWORKS, &c.—At a meeting of the Local Board of Health on Wednesday week, it was resolved "that the plan of Messrs. Nicholson and Tone, so far as the service pipes and tanks, be agreed to (previous to transmission to the General Board of Health for approval), but that the power of the present wheel be tested" before farther adoption. A letter from Mr. Trapp, of Manchester, was presented, but not read, in which the board was strongly dissuaded from taking their water from the river Don, into which the drainage from Rotherham, Sheffield, Chesterfield, and other places was disembogued before the water reached Doncaster. He recommended a minor stream called the "Beck" or "Great Ings," about five miles on the road to York, as a preferable source. Mr. Milner, a member of the board, offered his gratuitous services as surveyor to carry out their local Act.

DRURY-LANE THEATRE.—Mr. Marsh Nelson has been appointed architect to the theatre, in the room of the late Mr. Beazley.

TENDERS

Delivered 12th instant for the erection of the Bloomsbury Baths and Wash-houses. Messrs. P. P. Baily and G. Pownall, architects. The quantities taken out by Mr. W. Wright and Mr. C. Balam.

Jewell	£11,124	...	£185
Hicks	10,500	...	255
Carter	9,800	...	185
Little	9,732	...	150
I'Anson	9,600	...	200
Rigby	9,440	...	150
Coleman	9,340	...	150
Reading	9,229	...	250
Piper	9,194	...	300
Sanders and Woolcot	9,150	...	195
Holland	9,097	...	—
Mansfield	8,985	...	190
Pottock	8,930	...	115
Myers	8,563	...	165
Locke and Neesham	8,188	...	277
Curtiss	8,182	...	492
Cooper	7,890	...	185
Scissons and Robinson	7,732	...	222

The second amounts were for enamelling the slate of the first-class Baths.

TO CORRESPONDENTS.

"Potter and Payne v. *Essington."*—Mr. Potter asserts that his name should stand more prominently in the report of trial than it does. He must settle this with Mr. Payne.

"Retaining Walls."—Perhaps some of your intelligent readers will be good enough to give a rule by which I may arrive at the best proportions for a retaining-wall of brickwork, and the batter proper to be given per foot. We will suppose the bank to be supported is of *made ground*, and 15 feet perpendicular.—A. Z.

"J. B.," "W. R." (we have not time to call), "R. K.," "W D. P.," "J. T. A. W." (requests us to forward him a plan of a tile and brick kiln, which he wishes to erect, and liberally encloses a postage-stamp. We cannot do it at the price), "A Subscriber" (Bristol), "W. H.," "W. G. R.," "R. K.," "J. W.," "Rev. G. H. J.," "R. W. A." (call on the Editor), "M. N.," "A Subscriber," (Chelmsford), "J. H. P.," "J. M." (we shall pay a visit), "W. N.," "S. S. T.," "W. U." "W. J.," "S. and P.," "B. B.," "T. D. B.," "E. W. G.," "J. B. W." (received), "W. B.," "Sir W. J.," "C. C.," Gas (send us your address).

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

"Books and Addresses."—We have not time to point out books or find addresses.

ADVERTISEMENTS.

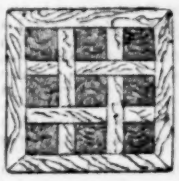
BENNETT'S THERMOMETERS, 65, Cheapside.—Railways, baths, churches, gardens, and chymists SUPPLIED with every kind of THERMOMETER at this manufactory, where 1,000 may be had for 50l., or may be selected from, at 1s. each, in 8-inch boxwood frames; larger sizes to suit every place, purpose, and climate. Barometers at equally moderate prices.—BENNETT, Watch, Clock, and Instrument Maker to the Royal Observatory, the Board of Ordnance, the Admiralty, and the Queen.—65, Cheapside.

TO ARCHITECTS, BUILDERS, &c.

ALL descriptions of TERRA COTTA, CEMENT, and PLASTER CASTINGS, executed in a first-rate manner, on reasonable terms, by J. HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane. A splendid assortment of Corinthian, Ionic, and other Capitals; Centre Flowers, Balusters, Trusses, &c.; Elizabethan and other Chimney Shafts.

ARCHITECTS or BUILDERS requiring ENRICHMENTS in COMPOSITION, CEMENT, or PLASTER, cannot have better executed work than that produced by WM. SMART, jun., of 18, CROWN-STREET, FINSBURY, who will be happy to give Estimates for work of any magnitude, at a reduced scale of charges. Architects' designs modelled with precision, and generally truthfully carried out. Established in the family three-fourths of a century.

PARQUET BORDERS are continually increasing in demand, being employed in most of the newly-built mansions for the nobility and gentry. They are manufactured in two or more shades of wood, of tasteful designs, varying in price from 2s. 6d. to 10s. per square foot, including laying down and all expenses. A very elegant border, suitable to surround the richest carpet, can be had at 4s. to 6s. per square foot.



These borders can, also, by a new process, be laid flush with the old floors, at a moderate expense.

Further particulars may be obtained on forwarding the outlines of the rooms for which they may be required to the LONDON PARQUETRY, 8, Whitefriars-street.

N.B. THE SPLENDID RUSSIAN PARQUETS, which were exhibited in the Crystal Palace, are now on show at THE LANGHAM BAZAAR, REGENT-STREET.

COLOSSEUM — WILL CLOSE AFTER THE HOLYDAYS.—The ORIGINAL and EXTRAORDINARY PANORAMA of LONDON, painted by Mr. Parris, will be EXHIBITED, with the other splendid features of this Establishment, entirely re-embellished, daily from half-past Ten till Four. The grand PANORAMA of PARIS by NIGHT, by Danson and Son, every evening (except Saturday), from Seven till Ten. The most admired music from two till half-past Four, and during the evening, when the conservatories, saloons, &c., are brilliantly illuminated. Admission, day or evening, 2s.; children and schools, half-price. CYCLORAMA, Albany-street, admission 1s. A grand moving Panorama of Lisbon and the Earthquake in 1755, is exhibited daily at Three, and every evening (except Saturday), at Eight o'clock, illustrated by appropriate music on the new grand Apollonicon. Children and schools half-price.

CHRISTMAS HOLIDAYS.

ROYAL POLYTECHNIC INSTITUTION.—Lecture by George Barker, Esq., on the Ballad Music of England, commencing with his celebrated Entertainment "An English Christmas," every Evening for a fortnight, except Saturday, at Eight o'clock.—Lecture by J. H. Pepper, Esq., on Ward's New Submarine Lamp.—Lecture by Dr. Bachhoffner on the Philosophy of Scientific Recreation.—Numerous Prize Models, Works of Art, &c., from the Great Exhibition, will be explained by Mr. Crispe.—Optical Effects in Dissolving Views, Microscope, Chromatrope, &c.—Diver and Diving Bell, &c. &c.—Admission, 1s.; Schools and Children under ten years of age, half-price.—Open daily from Eleven to Five, and every Evening, except Saturday, from Seven till Half-past Ten.

LONDON (WATFORD) SPRING WATER COMPANY,

TO BE INCORPORATED BY ACT OF PARLIAMENT.

[Provisionally Registered under the Act 7 & 8 Victoria, cap. 110.]

CAPITAL £350,000, IN 14,000 SHARES OF £25 EACH,

Of which 1*l.* 7*s.* 6*d.* will be payable on signing the Subscription Contract, and no further call will be made until the Act has been obtained, the plans, sections, and books of reference in respect of which have been duly deposited in compliance with the Standing Orders of Parliament.

A large proportion of the shares is reserved for allotment to the householders and landed proprietors of the district of the metropolis and the suburban places intended to be supplied by the Company, and all householders agreeing to take the Company's water will have the preference on the allotment of shares.

NO RESPONSIBILITY TO THE SHAREHOLDERS BEYOND THE AMOUNT OF THEIR SHARES.

DIRECTORS.

George Hinton Bovill, Esq., 19, Abchurch-lane.
Walpole Eyre, Esq., 22, Bryanston-square.
Henry Thomas Hope, Esq., M.P., 116, Piccadilly, and Deepdene, Dorking, Surrey.
Maurice H. Mahon, Esq., 7, Alfred-place, Bedford-square.
James Ponsford, Esq., 24, Palace-gardens, Kensington.
Sir Robert Price, Bart., M.P., 11, Stratton-street, Piccadilly.
William R. Robinson, Esq., Hill House, Acton, and 21, Austin-friars.
James Warren, Esq., Capel House, Enfield, and 96, Houndsditch.
(With power to add to their number.)

ENGINEER.

Samuel Collett Homersham, Esq., 19, Buckingham-street, Adelphi.

SOLICITORS.

Messrs. Maltby and Robinson, 7, Bank-buildings, Lothbury.

PARLIAMENTARY AGENTS.

Messrs. Law, Holmes, Anton, and Turnbull, 18, Fludyer-street, Westminster.

BANKERS.

Sir Samuel Scott, Bart., and Co., 1, Cavendish-square.

SECRETARY (*pro. tem.*).—Mr. Benjamin Rankin.

TEMPORARY OFFICES.—39, Moorgate-street.

Where, as also of the Bankers, Solicitors, and of Messrs. JOHNSON, LONGDEN, and CO., Stockbrokers, Tokenhouse-yard, Prospectuses and Forms of Application for Shares may be obtained.

PROSPECTUS.

The object of this Company is to obtain from the chalk formation at Bushey Meadows, near Watford, a plentiful supply of pure spring water, agreeable and uniform in its temperature at all seasons, and to distribute this water soft, colourless, bright, and incapable of producing a fur on boiling, at a cheap rate, through pipes, constantly charged, even so high as the upper stories, to the houses in the western and north-western and most elevated districts of the metropolis, and in the various suburban places intervening between these districts and the source of supply,—including, among others, Barnet, Bushey, Edgware, Elstree, Finchley, Hadley, Hampstead, Harrow on the Hill, Harrow Weald, Hendon, Kingsbury, Mill Hill, Pinner, Stanmore, Sudbury, Totteridge, Watford, Whetstone, Willesden.

In the western and north-western districts of the metropolis a cheap supply of pure, soft, spring water, always procurable in every floor of every house and manufactory, without the intervention of a cistern, fresh from the mains, upon the mere turning of a tap, will be a great boon for drinking, and other domestic uses, as well as for the finer manufacturing processes; since, with the exception of a few springs and wells mostly of an unsatisfactory character, the inhabitants are now dependant upon the dear, intermitting, and often insufficiently elevated supplies derived from the River Thames, objectionable as the water thus supplied is from its occasional discoloration by floods, from its hardness for use with soap in bathing and washing, from its depositing a fur on boiling, and from its being contaminated by the sewerage of the metropolis and of populous upland towns, and by the surface drainage of manured and ploughed land. These contaminations, more especially in summer and autumn, render the Thames water unpleasant and unwholesome, and foster in it disgusting water-insects.

The furnishing of pure water as proposed will cause the metropolis (which has increased upwards of 5,000 houses a-year during ten years, according to the last census, and has actually doubled its population during forty years) to enlarge rapidly in the direction of the high and the healthy grounds now forming its north-western boundary. The suburban places already named contain above 50,000 inhabitants, all of whom now depend for water upon the troublesome and expensive supplies obtained by means of deep wells, rain-butts, or water-carts, and whose property is consequently without adequate protection in case of fire. When pure and soft water is plentifully, conveniently, and cheaply furnished to these places, there can be no doubt that numerous new dwelling-houses will be soon built over their many eligible building grounds, for at present it is the want of such a supply that prevents the erection of them. The necessity for the supply felt by the inhabitants of the metropolis, and of the other places alluded to, was evinced in 1850 by petitions to Parliament signed by 39,000 of their number in favour of the incorporation of the Company.

With respect to quantity, it is intended to obtain eight millions of gallons daily from shafts or wells sunk in the chalk formation at Bushey Meadows, near Watford. These shafts will intersect fissures strongly charged with spring water fed by the rain which percolates to a great depth through a vast area of adjoining chalk-hills rising at places to an altitude of 900 feet. Under these hills there are impervious strata inclining towards Watford, which cause the water to accumulate in the fissures described, till it can escape, as at present it does, by subterraneous drainage to the sea. In 1840, Mr. Robert Stephenson, the eminent engineer, after having made a series of experiments and observations on a shaft and borings that had been sunk in the chalk in this locality by Mr. Robert Paton, by order of a committee of the House of Lords, for the purpose of demonstrating how copiously spring water can be thus obtained for the supply of the metropolis, reported, as his conclusion, "I am perfectly convinced of the feasibility of the proposed plan as far as regards quantity;" a conclusion that all subsequent experience and investigation have confirmed.* The water, which can be abundantly obtained at a natural elevation of more than 130 feet above Trinity high-water mark, will be raised, after being softened, into reservoirs situated on Stanmore-common, of a sufficient elevation to rise by gravity to all the highest grounds and buildings, and will be conducted into London through capacious pipes along the Edgeware-road.

With respect again to quality, the promoters, while regretting the obstructions that this and other undertakings for the supply of water to the metropolis have been subjected to during the last two sessions of Parliament, have the satisfaction of finding that the investigations deemed by the Government to be necessary have ended in the decided and the unequivocal confirmation of their former statements by a tribunal undoubtedly competent and impartial. Professors Graham, Miller, and Hofmann, the eminent chemists appointed by Government as a commission to consider the chemical quality of the supply of water to the metropolis, when alluding to water from the chalk intended to be supplied from Bushey Meadows, thus expressed themselves in a report addressed to the Home Secretary of State, on the 17th of June last:—"The inhabitants of London appear to have within their reach, in these chalk strata, a supply of water, which is asserted, on good authority, to be inexhaustible, and which may be considered as everywhere of an uniform composition and quality. . . . *It contains absolutely nothing of organic origin capable of further alteration or decomposition, and is therefore wholly unobjectionable on the ground of organic constituents.* Its clearness and brilliancy also appear perfect, from the complete absence of suspended matter, and are highly attractive. Possessing at all seasons the mean temperature of the year, the same water has an agreeable coolness and freshness, which might certainly be preserved in a great degree by proper means of conveyance and distribution. The only other quality desired in a town supply was softness. . . . The softening operation, by the use of lime" (proposed by Professor Clark, of Aberdeen, which frees the water from 2 grains of chalk per pint, or 1 ton per million gallons, without leaving anything else in the water in the place of the chalk), "is applicable in all seasons to the spring water, which indeed adapts itself with singular felicity to that process. . . . *The chalk spring waters can thus be commanded with certainty under 3 degrees of hardness, which is probably the extreme limit attainable anywhere in England for a great supply.* *The water of the present companies is reported by the same authority to be about 14 degrees of hardness.** "The chalk spring water, after being softened," resume the learned Commissioners, "is an extremely pure water. It appears to be considerably superior even to the soft water from the streams of the Surrey sands. The chalk water alone is uniform in its excellence at all times, the sources of it lying beyond the influence of weather or season. *In the judgment of the Commissioners, this softened chalk water is entitled, from its chemical quality, to a preference over all others for the future supply of the metropolis.*"

Water attested on such eminent engineering and chemical authorities to be ample in quantity, and the choicest in quality, can be furnished to the metropolis at the moderate average rate of 20*s.* per house per year, being only from a half to a third of the charges of the Grand Junction and West Middlesex Water Companies, and yet return a dividend of 8½ per cent. upon the capital to be expended in carrying out the undertaking. This was shown in a formerly published and carefully considered estimate of the Engineer of the Company, as follows:—

INCOME.

Say 40,000 houses, supplied with 170 gallons per day, at an average rental of 20*s.* per house	£40,000
1,200,000 gallons distributed to large wholesale consumers at 3*d.* per 1,000 gallons	5,475
	£45,475

EXPENDITURE.

Annual taxes, and working expenses	£15,725
Say, capital expended (including 10,000*l.* for Act of Parliament), 350,000*l.*, at 8½ per cent.	29,750
	£45,475

On the one hand, the well-attested superiority of the water, precluding all idea of future competition on the score of quality, and on the other, the economy of the proposed works compared with any of the existing ones, induced by the present low prices of iron and other materials necessary for the construction of them, unite in commending the undertaking to capitalists as affording a rare opportunity for making a profitable and safe investment.

Nor is it merely as an eligible pecuniary investment that the present undertaking claims encouragement. A cheap supply of soft, bright spring water, uncontaminated by the sewerage of towns or by the surface drainage of manured land, distributed at an agreeable and uniform temperature through pipes constantly charged into the houses of an extensive district of this crowded metropolis,—all of which conditions it is proposed to secure to the public by the Act of Parliament authorising the present undertaking,—will be conducive to the health and to the comfort of all classes. The highest rates the Company can ever charge in the Metropolis will be restricted, by an express clause in the proposed Act, to a scale (according to the rental) that was agreed upon between the promoters and a committee,† appointed for the purpose at a public meeting of the ratepayers of Marylebone, held in the Princess's Concert-rooms on the 29th of January, 1850. In such of the suburban places as attain to an elevation of more than 280 feet above the sea the rates will be necessarily somewhat higher than the forementioned, to compensate for the great elevation to which the water must be pumped and the dispersed situation of the houses, but the maximum rates for these places will also be defined by the Act. A Joint Stock Company thus constituted, besides securing to the consumers a constant supply of cheap and good water, cannot fail to lessen the price and correct the quality of the water in surrounding districts. Indeed, the recent investigation before the Select Committee of the House of Commons has made manifest that the introduction of such a company is the only practicable means of effecting these long-desired but hitherto withheld improvements. It is a company similar in principle to the present that has lowered the price of gas in the City from 7*s.* per 1,000 cubic feet to 4*s.*, besides improving its quality, and that has secured to the consumers, under express legislative enactment, that the present price of 4*s.* shall not be again raised. Promising a beneficial influence thus wide, the undertaking claims the support of every intelligent well-wisher of the community.

39, Moorgate-street, December, 1851.

* Mr. Dickinson, the paper manufacturer, is now, and has for many years past been, constantly pumping up, at four of his mills in Hertfordshire, about two millions of gallons of spring water daily for manufacturing uses. This large amount of spring water is obtained from four small borings (one at each mill) sunk in the chalk by Mr. B. Paten, and the level of the water in the borings has never varied. The experimental well above referred to, sunk in 1840, at Bushey Meadows, by order of a Committee of the House of Lords, was found to yield from four small bore-holes, each of only five inches diameter, sunk from the bottom of the well into the chalk fissures, as much as 1,800,000 gallons per day. Many other such practical illustrations might be adduced.

* Distilled water may be regarded as devoid of hardness; that is to say, no portion of any soap put into it for use is destroyed by any matter that the water itself contains. The presence of lime or magnesia is the cause of hardness in the Thames and most other waters. Each degree of hardness means as much hardness as would be imparted to a gallon of distilled water by a grain of chalk (or the quantity of lime or of calcium contained in a grain of chalk) dissolved in it by whatever means. Every water with any hardness will, in proportion to its degree of this quality, destroy some soap before any of the soap can act upon the thing intended to be washed. Thus a water of 3 degrees of hardness will destroy about 6 ounces of pale soap, and another of 14 degrees will destroy about 28 ounces (=1 lb. 12 ounces) for every 100 gallons, before becoming as soft as distilled water; but after these respective quantities are destroyed, the waters are equally soft, and every additional ounce will produce the same cleansing in 100 gallons of either as it would produce in 100 gallons of distilled water.

† Consisting of Thomas Chapman, Esq., F.R.S.; George Glasier, Esq.; Edward Joseph, Esq.; William Kennitt, Esq.; Peter Northall Laurie, Esq.; John Nicholay, Esq.; William H. Chicheley Plowden, Esq., F.R.S., M.P.; Jonathan Soden, Esq.; John Williams, Esq., M.P.; James Wyld, Esq., M.P.

LONDON (WATFORD) SPRING WATER COMPANY.

FORM OF APPLICATION FOR SHARES.

To the Directors of the London (Watford) Spring Water Company.

Gentlemen,—I request that you will allot to me Shares of £25 each in the above undertaking, and I agree to accept such of this number of Shares as may be allotted to me, and to sign the necessary Deeds, and to pay when required, the Deposit of £1 7*s.* 6*d.* per Share thereon.

Dated this day of 185 .

Name and Surname in full ... ...
Trade or Profession ... ...
Residence ... ...
Reference ... ...
State whether Consumer or otherwise ... ...